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THE SCOPE AND INDICATIONS OF MYOMECTOMY IN FIBROIDS OF THE UTERUS.*

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The technique of hysterectomy as a method of treatment of fibroids of the uterus has probably been perfected to an extent hardly equalled by any other abdominal operation. The mortality has been reduced to such a low percentage and the ultimate results are so satisfactory that it is difficult to persuade the average surgeon that any other method of treatment could possibly yield equally good results. If we consider that a fibroid is a benign growth, that many do not cause symptoms which affect the patient's health, and that but a small number serve as a possible origin for malignncy, we must admit that hysterectomy is a very radical procedure in many cases. Moreover, during recent years it has been shown that certain types of fibroids can be admirably treated with radium, and radium and hysterectomy are unquestionably the two most popular procedures of the present day.

We have not fully appreciated the scope of myomectomy, partly because no definite technique can be advised for all cases, and partly because of the prevalent belief that it is not as safe an operation as hysterectomy, and that further growths will form in too large a percentage of cases to justify its employment. For these reasons it is not performed nearly as often as it is indicated; indeed a review of hospital records will show that its performance is comparatively rare, in spite of the fact that it has been long since shown that it yields excellent ultimate results, with a mortality no greater than in hysterectomy.

There is no doubt that in the majority of cases of fibroids requiring surgical treatment hysterectomy is the more suitable and the more satisfactory operation, for the scope of myomectomy is limited by many factors. Its outstanding claim is that it preserves the menstrual function, and that a fair percentage of pregnancies follows its performance. Before it can be made a more popular operation, however, it must be shown that the number of pregnancies is sufficient to warrant the preservation of the uterus, that the growths do not recur as often as is believed, and that menstrual disturbances are corrected.

It is already proved that the mortality following myomectomy is no higher than in the case of the well established hysterectomy, and it is difficult to determine the basis of the prevalent impression that it is a more dangerous operation. Since few surgeons have had a very wide experience in its performance, the impression is probably based upon isolated instances, or the occasional case that ended disastrously. The operative mortality reported by W. J. Mayo is no greater than in the case of hysterectomy, and his figures are confirmed by Arthur Giles, who reported a mortality of less than 1 per cent in a series of 107 cases, and 1.8 per cent in a series of 167 cases. Victor Bonney has reported a 2 per cent mortality in 100 cases. In 50 consecutive cases in my own private practice, I find that there was one fatality, or a 2 per cent mor-

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tality. This death occurred in a young girl, 28 years old, who was by no means a satisfactory risk, as she had been bleeding over a long period of time, and was extremely anemic. Multiple growths were removed, including a very large one of the sub-mucous type, but there was no evidence of shock at the conclusion of the operation, and for the first three days there were no untoward symptoms. She then developed an acute dilatation of the stomach, which could not be controlled by any measures, and death ensued on the seventh day. There was no evidence of infection or hemorrhage at any time. The other cases all made uneventful recoveries, with but two exceptions. One developed a hemorrhage on the eleventh day, which was the time of her regular menstrual period. Drainage was instituted through the lower end of the abdominal incision, and the only ill effect was the prolongation of her convalescence. She left the hospital with the wound well healed, and reports excellent health ever since. The other case ran a septic temperature, beginning about the seventh day. The condition was diagnosed as a bilateral parametritis, and on the nineteenth day a quantity of pus was evacuated through the original incision, after which she made a good recovery. This patient also was extremely anemic, and in other ways was not an ideal surgical risk.

One of the common objections urged against myomectomy is the danger of recurrence of fibroids, and the ease with which small growths may be overlooked at the time of operation, which eventually develop and demand further intervention. It has been difficult to establish definitely what percentage of cases upon whom myomectomy has been performed develop subsequent fibroids. Arthur Giles, who has recently investigated his own series of cases, found the uterus of normal size with no return of the growths in 90 per cent of 88 cases. Just how many of the 10 per cent in whom the recurrence was reported showed new growths, or minute growths overlooked at the time of operation can, of course, hardly be estimated. Some of the growths were very small, the size of a mulberry or a pea, and were giving rise to no symptoms. They were merely reported as having been found at the time of the subsequent examination. In my own series of 50 cases I have been able to follow up 35, and only one of these (2.8 per cent) showed a recurrence. This was found by the attending physician three years afterwards, in the course of a pelvic examination to determine the duration of a pregnancy. It was very small, located on the anterior wall, and was giving rise to no symptoms. In this case myomectomy was not performed by laparotomy, and the small growth was probably overlooked owing to the difficulties of examination through the vaginal vault. The percentage of recurrence reported by Giles is considerably higher than that reported by other surgeons, but even a recurrence of 10 per cent does not necessarily offer an insurmountable objection to myomectomy, since only a few of the recurrent growths cause symptoms and in those cases a short application of radium usually controls the trouble.

Another question of interest is the effect of myomectomy on the menstrual loss, and on this point we can give our patients fairly definite assurance. Of the cases which I have been able to follow up, 95 per cent menstruate regularly and normally, and 97 per cent report their general health markedly improved. Two patients report continued ill health. In one of these cases the menstrual disturbances were entirely controlled, but two years later she was obliged to submit to an operation for acute intestinal obstruction, which does not seem to have been in any way connected with the previous operation. In the other case a decided neurotic element is present. Five per cent of the patients report menstruation still profuse, though in practically all the cases the flow is distinctly less. Dysmenorrhea is very commonly associated with fibroids, and a large number report this symptom either improved or more readily controlled by simple measures. Two patients have not menstruated since the operation; one of these was 48 years old, and the myomectomy was done in the course of very extensive work in the upper abdomen; the other patient was 36. The conclusion to be drawn, then, is that about 5 per cent of our cases will continue to menstruate profusely following myomectomy. But since we have

an ideal therapeutic agent in radium, which can be used in graduated doses without producing a premature menopause, this objection is also not insuperable. I might add that in one of my own cases excessive bleeding following myomectomy has already been controlled in this way.

The next important point to be considered is what percentage of women bear children after this operation. So many considerations enter in, however, that no definite conclusions could be drawn without an exhaustive study of a large series of cases, and I am not aware that any single collection has been published large enough to decide this point. In Giles' series, 28 per cent of the women who had a chance to conceive became pregnant. In my own series, among the 35 whom I was able to follow up, six were unmarried, and there were ten pregnancies among the remaining 29 patients (about 28.6 per cent). Of these, six patients, or 60 per cent, had not been pregnant previously. Three were pregnant at the time of operation, of whom one miscarried five days afterwards. She later conceived and was delivered normally at term. Five others were also delivered normally at term. One had a premature rupture of the membranes at a little over seven months. Two were delivered by Caesarean section. In one case the patient was delivered in another service, and the indications are not known. The second patient conceived twice, and was delivered each time by abdominal section for borderline contraction, the test of labor being given during the first pregnancy. She died four days after the second section of acute dilatation of the stomach. The last patient is now nearly three months pregnant. Of the 19 who had the chance of pregnancy and did not conceive, it is interesting to note that 14, or over 75 per cent, had been married prior to the operation sufficiently long to have borne children, and yet had never been pregnant. These figures prove that so many other factors may enter the question of pregnancy that it is not well to emphasize this possibility unduly. The average woman, however, does desire to preserve the menstrual function and to become pregnant if she can, and myomectomy makes both of these things possible. And pregnancy does follow in a sufficient number of cases to recommend the operation unqualifiedly whenever it is indicated.

Some women will insist upon the assurance that hysterectomy gives that there will be no return of the trouble, and request that that type of operation be done which will make the outcome final. I think, however, that if the advantages of myomectomy are placed before the average woman in the proper light, and if the possibility of the use of radium if trouble does recur is explained to her, she will usually prefer myomectomy when it can be performed. Its advantages have so far outweighed its disadvantages in my own work that I am prompted to widen its indications whenever possible.

In deciding whether hysterectomy, myomectomy or radium is indicated in uterine fibroids, we must take into consideration not only the number, size and location of the fibroids, but also the age and social and financial condition of the patient. When a woman is dependent on her own efforts, and perhaps is supporting a family also, when it is imperative that she return to work at the earliest possible moment and in the best possible condition, no chance must be taken of a second operation or even of further treatment. The age of the patient is also an important consideration. Myomectomy has few indications after 38. In a few of my cases the patients were older, but there were always special reasons for the procedure; in 86 per cent of the cases the patients were under 38. In single women in the late thirties the indications for myomectomy would not be so urgent as in the married nullipara who especially desired children. The indications also are somewhat qualified by the history of previous pregnancies. When a woman has several living children there is less reason to preserve the uterus than in the case of the woman with no children who particularly desires motherhood. There is also another reason for preservation of the uterus which may well be emphasized here, namely, for the correction of prolapse. This series will show several instances, all among older women, where fibroids were associated with retrodisplacement

and cystocele. Myomectomy was done with the interposition operation, and in no single instance was the result unsatisfactory, whereas when hysterectomy is done in these cases, we not infrequently find the results of plastic work poor, and a subsequent prolapse of the vaginal walls.

It is hardly necessary to add here that myomectomy is useless if the appendages are diseased. Fibroids are frequently associated with chronic salpingitis and with ovarian disorders, and in these cases neither radium nor myomectomy has the slightest indication, and hysterectomy is the only possible procedure.

The ideal case for myomectomy is the single, well defined, encapsulated tumor. As a rule, the case presenting numerous small growths does not give satisfactory results. It is easy to overlook them, and if they are of different types and widely distributed, a damaged and useless organ may be left, and the whole point of the operation be defeated. I have, however, removed as many as 18 growths from one uterus, the woman afterwards conceiving and delivering normally, and in 28 of the 50 cases upon which this study is based, multiple growths were removed, some of them from five to eight inches in diameter. I might point out in this connection that in a large service in a public hospital we find fewer indications for myomectomy, owing to the fact that the colored patients particularly seldom seek medical relief until they are driven to it by pain or incapacity for work. When they do present themselves, the growths are so numerous or of such enormous size that nothing but hysterectomy can be considered. Moreover, there is frequently associated tubal disease, and even in the cases where this is not present and myomectomy might be possible, the difficulty of persuading them to return for further observation and treatment if necessary makes hysterectomy most frequently the operation of choice.

The sub-peritoneal fibroid is most easily handled, although when it is found presenting a broad base the uterine wound is sometimes very difficult to close. There is rarely any difficulty in removing the interstitial types, and many of these growths may be removed through a single incision by tunnelling into the uterine musculature. This point, however, is often overemphasized because of the fear of multiple incisions through the peritoneal covering of the uterus. It is better, in many instances, to make more than one incision than to run the risk of damaging the uterine muscle by blunt dissection in an endeavor to reach many growths through one incision. Submucous growths often present difficulties, and usually demand opening the uterine cavity. These are the cases which sometimes present subsequent infections of the operative field, and must be managed with the strictest aseptic precautions. In 20 per cent of my cases, however, in which the cavity was opened, only one had a complicated recovery.

Fibroids are most frequently located in the anterior wall of the uterus and are most easily dealt with in that position. Over half of the growths in my own series were so located. Tumors situated between the folds of the broad ligaments present occasionally some rather exasperating problems owing to the relations of the blood supply and the ureters, but with care these problems are readily solved. Tumors involving the lower uterine segment and the cervical region will more often demand hysterectomy because the elongation of the cervix they produce is difficult to deal with after their removal.

Hemorrhage during the operation is sometimes rather annoying but with increasing experience this is easily controlled. In addition to careful suturing of the wounds, it is a good plan to throw a ligature about the branches coursing along the side of the uterus; this may be done as a preliminary step, on one side or on both as indicated, and the operation as a result will be practically bloodless. One of the chief difficulties of myomectomy is the control of oozing, and endeavors to overcome it have prompted the use of too much ligature material and too tight suturing. It was pointed out many years ago by Dr. Ochsner of Chicago that some of our mishaps arise from too tight suturing of wounds, and Dr. Mayo also attributes many complications to over-zealousness in this regard. The sutures should be

placed sufficiently taut merely to control the oozing, and a suture should be placed about half an inch beyond each end of the incision. The results are surprisingly effective.

Myomectomy is often applicable to growths complicating pregnancy, though as a matter of fact the majority of women with fibroids will often pass through an uneventful pregnancy and deliver normally at term. Too often do we see the uterus removed in the early months of pregnancy with a child occupying the cavity, a procedure practically never indicated with a non-viable child. The average case can proceed to term and be delivered according to the indications at that time. Certainly where growths have risen out of the pelvis and do not interfere with the birth canal the test of labor should be allowed. Where growths occupy the pelvis, the patient may be subjected to myomectomy during the pregnancy without disturbing the fetus. I have done this in three instances, in only one of which the patient miscarried. In the second of these cases the growth practically filled the pelvic cavity and miscarriage seemed inevitable, but after myomectomy the patient went to term and delivered normally In the third instance the patient was four months pregnant and had an incarcerated fibroid. This was drawn out of the pelvis and removed, and she also delivered normally at term.

These cases have been reviewed with the idea of showing that we may extend the indications and scope of myomectomy, and to emphasize that there is no standardized technique for its performance. Each case must be decided on its own merits, but with ingenuity, a careful search for minute growths, thorough hemostasis, and strict aseptic precautions the operation is in every way as safe and as satisfactory as hysterectomy, and, while its scope is limited, it is decidedly superior to the more radical procedures.

DEAFNESS AND ITS PREVENTION.*

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A specialist reading a paper before a general body such as this, should attempt to find a subject of interest and understanding for the general practitioner.

I have chosen deafness and its prevention. Let me emphasize *prevention,* and not treatment, for I will touch upon the treatment only in so far as it relates to prevention. Certainly this subject is of great interest to all medical men, but especially to the general practitioner and the pediatrician, for as these are thrown in closer contact with patients and at an earlier age than the aurist, it is to them, first, that the patient with slight, or beginning ear trouble comes or is brought.

It may be stated in the beginning that most ear conditions seen early can be cured and permanent damage avoided, that most chronic deafness can seldom be improved and rarely be cured.

Of all the misfortunes that can befall one probably that of being deaf or blind is the worst, which of the two is the most distressing would be hard to decide.

Deafness may be divided into three classes: Congenital, hereditary and acquired. The so-called deaf mutes belong to the first and second class, and need our attention mainly from the educational point of view, these unfortunates should be placed in institutions for the deaf and dumb at an early date where they can often be educated and made useful citizens.

Acquired deafness may be divided into two great classes, conduction deafness and perception deafness, and possibly a third, otosclerosis. Conduction deafness is much the most common, although many believe the Perception apparatus is always involved. What do we mean by conduction deafness. The ear is divided into external ear, drum membrane, middle ear, and oscicles, internal ear with the cochlear, part of eighth nerve, the eighth nerve and brain center. The outer ear, external canal,

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drum membrane, osicles, and middle ear simply receive the sound and transmit it to the internal ear and auditory nerve, therefore the structures are known as the conduction apparatus, and deafness due to trouble in these parts known as conduction deafness. Deafness due to injury or disease of the cochlear nerve, internal ear, eighth nerve or brain is called perception deafness.

Congenital deafness takes place before the child is born and may be due to a true congenital defect because of an abnormal development, or to syphilis of one or both parents. Hereditary deafness can be claimed only in those cases in which there is a deafness among the ancestors in the direct line. Acquired deafness comes on after birth within the first few months or later on in life, the result of some febrile disturbances, one of the exanthemates, or because of certain localized conditions, which interfere with the delicate mechanism of the middle ear. The majority of cases are the result of neglect of the ears during or after measles, scarlet fever and meningitis, the meningitis may be either of the epidemic type or one of the low grade meningitides so often caused by syphilis, deafness caused by meningitis is usually of the perception apparatus. It is a sad commentary on our knowledge of the subject that over 30 per cent of the inmates of our institutions for the deaf, are children who have an acquired deafness which might have been prevented if taken in time.

The removal of the tonsil and adenoid is a question of vital importance, particularly in relation to the subject with which we are dealing, there may be innumerable controversies as to whether the adenoids and tonsils should be removed, or when, for the purpose of improving health; there should be no question about their removal when any signs of ear trouble occur. The large adenoids give sufficient trouble to call for their removal. As to the small adenoids which often block and infect the mouth of the eustachian tube, that is open to question in minds of those who have not seen the aftermath, in the form of progressive deafness. No matter how small the adenoids are, no matter at what age they are first noted, be it the first months of life or during the second and third year, they should be removed, as soon as there is any evidence that they are causing trouble, particularly with the ears.

As a general rule, the majority of men are in favor of leaving the tonsils in situ until the second year of the child's life, unless they are found to be directly responsible for systemic disease, or have been the seat of repeated local infection, however we must not lose sight of the fact that tonsils may cause impairment of hearing because of their close proximitely to the eustachian tube.

The discharging ear has been, or is, an infected ear. Certain deposits have taken place in the tympanic cavity, such as the deposits of fibrin and perhaps inspissated pus, this may make an alteration in the hearing mechanism which may be permanent, the eustachian tube may still be inflamed so that no air reaches the middle ear, or else a small perforation dry and crusted over may remain unnoticed, these are conditions which can readily be remedied if seen early, but which are sure to leave their mark later on, if neglected. All children's ears should be tested after any suppurative conditions, and one should not be satisfied until the hearing has been brought back as nearly to normal as possible.

It is only necessary to call attention to the various amount of harm that is done to ears during the exanthematous diseases, particularly measles, scarlet fever and meningitis. The ears are usually taken care of during the acute stages of the disease, and remedial measures are at once used, yet the after effects, or chronic conditions such as adhesive processes, or slight discharge are neglected for years, which means permanent impairment of hearing.

Medical men are realizing more and more that they must acquaint themselves with the various factors that lead to deafness in childhood, and with those factors which arrive in childhood and bring about deafness in later life, the problem divides itself into three parts—1. Education of the parents, teachers and physicians to those factors which give rise to deafness. 2. The proper in-

terpretation of causative factor in early childhood which can be corrected at that time. 3. Preventive measures which will arise during the routine examination of children's ears. In a paper of this kind we have not the time to take up each of these subjects as we should, under the first heading, *"Education of the parents, teacher and physicians, etc."* I will only mention a few points. Children whose parents or relatives have had progressive deafness, children born of parents closely related, or of any syphilitic parents should all be more closely observed by parents and doctors. Under the second heading *"The proper interpretation of causative factor in early childhood which can be corrected at that time,"* the general public, also the general practitioner should know that a discharging ear is not only a source of danger to life, but will probably injure hearing, don't send these cases away with the suggestion to wash out ear with salt solution or simply tell them "as long as the ears are discharging the poison is coming out, not to try and stop the discharge", this is frequent advice I regret to say. Even after ear has ceased to discharge, children tested will be found to be slightly deaf, it is neglect in these early suppurating ears or in the adhesive or so-called catarrhal conditions that lead to deafness in later life. These conditions can be treated in a number of different ways, and it is only by careful study of the case that we often can cure these acute and early conditions and prevent serious deafness late in life.

The third, *"Preventive measures which will arise during the routine examination of children's ears."* Usually all school boards have an oculist connected with them, the eyes are closely watched, yet few school boards have an otologist connected with them and usually it is the duty of the teacher to detect ear trouble, this is rather unsatisfactory for the early conditions are overlooked or if recognized the child is told to have ears examined and that is the end of it. Certainly ears should have the same supervision as the eyes. Ears of all children should be examined by otolgist routinely, nurses can be instructed to make the simpler examination, and refer those children who need more detailed studies to the specialists. Clinics should be established in the schools themselves so that under a competent aurist the treatment can be expidited and little time lost from school duty.

It will be noted that so far the writer has devoted his attention to only children and purposely, for many times deafness can be prevented but seldom cured, and often only slightly improved, therefore prevention should start with earliest manifestation of ear trouble which in a great percentage of cases can be traced back to early childhood.

Now let us dwell for a few minutes on the so-called chronic progressive deafness; this is a very common condition and usually associated with tennitus, this form of deafness is placed in three categories — chronic catarrhal, otitis media, otosclerosis and nerve deafness. The three periods at which progressive deafness most commonly has its onset are at the crisis of life: puberty, adolescense and the menopause, and to these may be added a fourth, the oncoming of actual old age. Here we could write several papers on causes, I will mention only a few conditions to look for; focal infection, heart and kidney trouble, diseases of the internal gland, menstrual disorders, nervous condition, worry or shock, disturbances after severe illness, blood pressure changes, in fact a complete and most painstaking examination of the entire body is called for, even when we can find no cause.

Otosclerosis. There are about ten different theories as to the cause of otosclerosis. Brude gives authorities for syphilis, artereo-sclerosis, chills, internal secrection changes, latent tetany, rheumatism and gout, uremic intoxication, scrofula, anemia, rickets, osteomelacia, auto-intoxication, tuberculosis, tropho-neurosis, and wasting diseases. The hereditary nature is most marked, as with bony abnormalities and some bone diseases. Moons and Politzer gave reasons for considering it a primary disease of the bony labyrinth, the mucous membrane was found perfectly normal. Mayer now considers it an undescribed variety of otitis-fibrosa and osteofibromatosis. Ferreri says, there seems a "great affinity" between ostemalacia,

rickets and otosclerosis, therefore the treatment by phosphorous, cod-liver oil and gland therapy. Sieberman regards it, as an over development in the labyrinth of cartilage remnants, which normally are there at least until adult life, especially in the region in front of and above the oval window.

In discussing perception deafness there have been two theories as to etiology that have divided otologists into two camps: First, those who have believed in the theory of negative pressure and, second, those who have believed in infection as the primary cause. Andrews claims that all deafness is the result of a deep infection in the lymphoid tissues, that the infection then exists as a chronic focus, subject to acute exacerbation, that the resulting deafness does not occur from extension by continuity of the infected tissue through the tubes and middle ear, so much as it is the result of the toxin acting on the perception apparatus, that is we have perception deafness from the beginning, without regard to tissue action in the middle ear. Lymphoid tissue predominates until adolescence then is replaced by fibrous and mucoid element, which are much more suspectible to infection. The next class of cases follow infectious diseases, which in many instances, result in chronic foci, subject to acute exacerbation throughout life. Foci of infection may lay dormant for years in teeth, tonsils or other membranes of Waldeyer's ring, sinuses, lymph glands, etc. ,and only after some sickness, as influenza, measles, diphtheria, etc., the patient develops a progressive deafness. Why this infection takes place in a particular joint in the endocordium or middle ear, we do not know, but once having occurred, the tissue reactions go on in the same organ indefinitely. In all cases where there is a functional disturbance of the perception apparatus and in the organ of hearing, as in other organs, the restoration of function is dependent on whether its special nerve mechanism is irreparably damaged or only functionally disturbed. The mouth, nose and lymphoid tissue continually harbor a number of bacteria. These patients have low resistance and overwork is as patent in activating the focal process as is exposure, this being the case it is believed that the deafness is a manifestation of the systemic infection resulting from a special strain of bacteria, the toxin acting on the perception apparatus from the beginning and continuing to act until the terminal stage of marked perception deafness on nerve degeneration, the accompanying gross tissue changes in the conduction apparatus playing but a minor roll in the deafness.

Of all the cranial nerves none is so vulnerable to syphilitic infection as the eighth, or auditory, for this reason it frequently happens that the eighth nerve is first to feel its influence, and the otologist is thereby afforded an opportunity to recognize the general character of the disease from the start. In the majority of cases the cochlear branch is affected to a far greater degree than the vestibular, both may be affected simultaneously. In the marked shortening of bone conduction we have one of the most reliable and most striking evidences of luetic infection, as it is perhaps the most striking sign, occuring in 95 per cent of cases. A deafness without apparent middle ear trouble, showing a positive Rinne, should at once arrest the attention of the aurist. These cases if treated early by salvarsan, potassium iodide and mercury is good for improvement of hearing, but should be guarded; prognosis of the hereditary type is bad.

Conclusions:

1. Deafness if seen early can often be cured.

2. Neglect and under treatment of diseases of the ear, nose and throat in childhood is responsible for a great deal of deafness in later life.

3. Syphilis and focal infection are the most common causes of perception deafness.

4. In all deafness of long duration the changes for improvement are slight, for cure, practically hopeless.

5. It is absolutely necessary to educate the doctors, teachers and parents of the great necessity of insisting upon having all cases of deafness treated early and vigorously, thereby hoping to prevent a great deal of deafness in later life.

DISCUSSION

Dr. Homer Dupuy (New Orleans): I shall touch upon a phase of the subject which I hope will interest the general man.

I make a plea for the more frequent performance of tympanotomy—incision of the ear drum. If a child has an acute middle ear suppuration there are only three possible outcomes: First, there may be spontaneous rupture of the ear drum with relief of symptoms—pain, temperature, etc., and possible restoration of hearing. Second, abscess without perforation, but with subsidence of the temperature and pain and the ultimate recovery of hearing. And a third group in which there has been no perforation of the ear drum and yet when the acute sumptoms have passed away exudate remains in the middle ear. It is this third group that we so often see with marked and permanent deafness.

The persistence of pain and temperature due to otitis media calls for incision. Not to do this is to invite spontaneous perforation which is not desirable. Even without this undersizable perforation by Nature the pain and temperature may disappear but the post-inflammatory remains in the middle ear may so disorganize its contained structures that incurable deafness may ensue. Years after, these patients seek relief but the permanent damage was done during the previous attack of ear trouble when no incision of the drum was performed. To wait for Nature to perforate is to ask for something which does not equal in efficiency the surgeon's incision. A timely and properly performed tympanotomy is conservative and does help preserve the hearing.

Dr. A. E. Weil (New Orleans): I think there is no question that the ear, nose and throat men are the men who see the disastrous results following neglected cases of ear conditions which result in deafness. I think we are all pretty much agreed with what Doctor Patton has said in his paper. We also agree with what Doctor Dupuy has said about opening the ear drum. But I would go a step further than Dr. Dupuy in his statement, and in fact I would be inclined to disagree with him on the subject. He says that Nature ruptures the drum and the pus is allowed to escape and we have sufficient drainage. I doubt that. I have seen a great many of these acute otitis cases, especially in children, in which the case has been watched, the temperature and pain allowed to go on for two or three days; finally the ear drum is ruptured and you get drainage after a fashion, but if you look at the drum you will see a little bit of a pin-hole opening through which the pus in being forced. I claim that that is not sufficient drainage and that these ears frequently do not get well, and certainly not as quickly as cases where there has been an incision in the drum. Therefore I maintain that where a child has pain and temperature we are not justified in waiting 3 or 4 days but within the first twenty-four hours, if the pain and temperature remain, free incision should be made, and adequate drainage established. Drainage of the middle ear is the **sine qua non** in the treatment of acute otitis.

Doctor Patton has spoken of the removal of tonsils and adenoids, and of course we all agree on that. But he made one statement with which I am not entirely in accord, and that is that adenoids in a child should be removed, no matter what the age of the child. I do not believe that adenoids and tonsils should be removed under five or six years of age, unless we can see that they are causing definite and distinct damage to the ear.

One further point has not been touched upon by Doctor Patton, probably on account of lack of time, and that is deafness resulting from acute otitis, cases that go on discharging for a certain length of time. In ordinary otitis if a tympanotomy is properly performed in a few days the drum membrane returns to normal and the hearing is restored. But there are a certain number of cases in which this does not happen and in which the suppuration suppurated for six weeks without distinct sign ing much sign of abatement. It is in those cases that I think the otologist has a distinct function. I maintain where an ear has been supurated for six weeks without distinct signs of subsidence, it is time for us to interfere and open the mastoid and get free drainage of the ear from in front and behind. A mastoid operation is not a serious operation in acute mastoid. And where you get an acute otitis which persists for six weeks, the mucous membrane of the mastoid is certainly involved as well as the middle ear, and in those cases I claim we are following conservative procedure in opening the mastoid and draining these ears from behind as well as in front. If they are allowed to persist indefinitely we will get chronic otitis with large perforation of the drum, and the chances are it will not heal. If it does heal it leaves a scar and the hearing is permanently affected. Consequently I claim that conservatism requires opening the mastoid if middle ear trouble persists, without distinct signs of subsidence, for about six weeks.

Dr. F. C. Ewing (Alexandria): A few years ago, across the ocean, I asked a young man in one of the hospitals why he had taken up eye work, and he said "Because you cannot cure anything in the ear." That was true some years ago, and it is too much so today. We know that tuberculosis is a reproach to the general practitioner, and I think otosclerosis is a reproach to our profession. The paper has given you the pathology but the otology, is something we know little about. The first cause we do not know. I have ceased to treat it, because I think the treatment is ineffectual and in a small place like Alexandria, people reproach you for not doing them good, the contact being more intimate. Furthermore, honesty is the best policy." Of course the important thing is prevention. The Doctor says 20 per cent of deafness could be prevented. If 20 per cent could be prevented, then 90 per cent, of preventable cases must be due to adenoids and tonsils—those due to infection, we can not foresee and they can only be prevented through hygiene. How can we foresee syphilis, for instance? The main thing is to do something when the imminent happens. I advocate a free myringotomy,

free syringing, and the postural treatment of acute suppurative otitis media where the membrane has not ruptured.

In influenza infection you may not see any flow for twenty-four hours, after myringotomy, and then it will run out like water. I endorse what the Doctor says about the mastoid operation. I question whether you could prevent toxemia in scarlet fever and supperation of the middle ear by spraying. The Doctor speaks about catarrh causing deafness. Catarrh will regulate itself when the patient's health improves. I see many tubercular patients, if it is the simple, unobstructive form, in the Veteran's Hospital at Alexandria. We know better than to spray them. We say, "You will be better when your health is better." these boys want me to treat them for nose and throat catarrah, but what is the use? We know unless we build up the system treatment is useless in tuberculosis. A great deal of prevention resolves itself into building up a strong body by regularity of living, by bathing and fresh air and rational hygene.

Dr. T. R. Ragan (Shreveport): I take to myself as well as the profession generally a great deal of reproach in allowing this condition to progress towards deafness. I think the paper is directed toward the general man to make him more cautious. We all see running ears that are constant and many of them have a history of having existed for many years. If the parents see a bad eye they call attention to it, but they do not know the importance of calling attention to ears in the same way. I think we should all take this to ourselves and see that we do our part in calling attention to the specialist, so they may get proper treatment early. In the city where they have school inspectors a great deal of attention is paid to them, but in many cases the damage is already done. It is up to the profession generally to recognize this and call attention early enough so they may get the right treatment and prevent the deafness which is incurable after it occurs.

Dr. Rufus Jackson (Baton Rouge): I want to mention one class of case mentioned by Doctor Dupuy, and that is the case that does not come to immediate and active suppuration. With the multiplication of the character of infections we are having today, and the borderland cases of the different groups, we are having many cases that do not come to frank supperative process, and yet in these cases the child may have impairment of hearing for a considerable length of time. To my mind that is one of the most important conditions that the general practitioner should be watching for today. If the ear drum perforates and the child is relieved by nature; if there is no pain behind the ear or other objective symptoms, the child is not in imminent danger; but this other condition is insidious. You find the child has a slight deafness which does not clear up completely in a few days. That is the case that leads to constriction of the eustachian tube and an adherent process of the middle ear.

There are some controversial aspects of this question that are very tempting to us specialists but that are not of interest to the general practitioner; and as Doctor Patton has said, it is important that this should be considered by the general practitioner. But I must say this—and I am a good enough friend of Doctor Weil to say it—that I have never seen any man perform a mastoidotomy on six weeks supperation. I have been taught by the best men I know and they followed the idea that mastoid operation is reserved for necrosis of the bone, that you must have a necrotic process of the mastoid cells, or a granulation process of the antrum, before you are justified in doing a mastoid operation.

But if a man has cleared up the nose to keep it from continuing this infection through the Eustachian tube, and there are no positive findings to indicate necrosis or granulation process there is some constitutional condition that needs to be cared for.

Dr. William Sheppegrell (New Orleans): I was not present when Doctor Patton read his paper, but have heard nothing in the discussion regarding the effects of hayfever on deafness. Cases that have suffered from hayfever for a number of years, almost invaribly have a certain degree of deafness as a complication, the hearing usually being lowered 25 per cent., and frequently 50 per cent or more. Unfortunately, hayfever is rarely recognized the first year of its development as forming a distinct clinical picture. An examination of the nostrils, however, shows a difference between hayfever and coryza that is easily recognized by the expert, and absolutely confirmed by the diagnostic tests. The first year the patient is rarely treated for hayfever, as he usually assumes that he has a cold. The second year he becomes suspicious on account of its character and periodicity, and the third he begins to realize he has hayfever. The subject of hayfever fortunately, is now better understood and I wish to emphasize the importance of its early recognition and treatment with a view of preventing deafness, as early cases respond especially well to the immunizing treatment. After the second season the ears become more affected, and this tendency increases with each season.

You first have congestion of the Eustachian tubes and consequent defective ventilation of the middle ears, then retraction of the drums, and later a condition develops which is as difficult to treat as the usual cases of catarrhal deafness. I especially wish to call your attention to this phase of hayfever, as such cases are more apt to come to the attention of the general practitioner.

Dr. W. T. Patton (closing): I believe with Doctor Weil that after six weeks of continuous discharge you should do a simple mastoid and get a larger opening.

Doctor Ewing spoke of otosclerosis. Otosclerosis and osteomalacia have been studied together lately and I think the experiments have been practical. In some cases the use of codliver oil has been quite helpful.

I thank Doctor Ragan, because he is the only general practitioner who spoke ,and I had hoped that the general men would not be so timid, but would give us some discussion.

OSTEOMYELITIS.*

BY URBAN MAES, M.D.
NEW ORLEANS.

While there is no disease in the surgical category which is better known or better understood than osteomyelitis, it still presents many phases in which the diagnostic acumen of the surgeon of experience is taxed, and in spite of laboratory data and careful X-raying, an occasional case still slips by with extensive loss of function or even loss of life. Two axioms which should be uppermost in the mind of every surgeon are: No purgation in acute abdominal pain until the diagnosis is assured, and early operation in osteomyelitis. Many surgeons in large centers, and those with hospital and dispensary services rarely see acute infectious osteomyelitis in its initial stage. It is to the general practitioner that the warning must be sounded, for he is called first, and may undertake medical treatment at the only time when actual benefit can come from anything but a mutilating surgical procedure, when bone has been destroyed, and life and limb are in jeopardy.

The older name, acute infectious osteomyelitis, has given way to acute hematogenous osteomyelitis, both as more fitting, and as a more exact description of the disease, which is always blood-borne or metastatic; septicemia is not necessarily implied, although this condition mya suprevene, and is undoubtedly present in many if not most of the fatal cases.

In order to review fully acute hematogenous osteomyelitis as an entity, it is necessary to recall the circulation in bone as originally described by Lexer; the etiology is the same whether we accept his conception or the more recent observations of Starr, and there is only a minor point of difference in their theories as to the treatment of the disease. Lexer has shown that the main nutrient vessel enters the shaft of the long bone near the middle, and divides, sending branches to both ends, which, after numerous divisions, end in fine capillaries in or near the metaphysis. The epiphysis gets its blood supply from the cortical branches, which are numerous and distributed to the entire surface, while the cortex of the shaft is supplied from the periosteal vessels. It will thus be evident that the long bones derive their blood supply from three separate sources, and this will explain in a measure why the cortex becomes involved only secondarily in osteomyelitis, while the epiphysis is rarely if ever attacked by the disease. On the other hand, it is the fine capillaries originating from the main nutrient vessel in which the septic infarct becomes lodged, and we have simply to apply the reactionary phenomena of inflammation to bone tissue to complete the early picture of hematogenous osteomyelitis.

With this fundamental view of bone circulation before us, let us now turn to the pathology and attempt to complete the picture before considering the diagnosis and treatment. The septic infarct may have its origin in an unnoticed skin furuncle, a tonsillar crypt, or the mouth cavity, and is carried in the general circulation until a satisfactory lodging place is found. The lung and cerebral capillaries, being relatively large, do not arrest the infarct, and it finally reaches the terminal capillaries in the metaphysis of the long bone, where the bacterial colony begins to grow. On account of bone density we cannot have much, if any swelling, therefore early necrosis occurs, which may extend rapidly along the marrow of the diaphysis or may find its way through the cancellous structure to the surface, and make itself known as a subperiosteal abscess. In the experience of the most of us, both of these phenomena are possible, and the contentions of both Lexer and Starr would seem to be correct. With increasing inflammation, more pressure is exerted, and actual death of bone occurs with localization of the abscess and the casting off of a sequestrum. In many instances this localization does not occur, and we see rapid involvment of the entire marrow. In an example of this sort recently observed, the infection found its way to the sub-periosteal layer and spread rapidly in this space, causing a necrosis of the entire shaft of the femur by cutting off its blood supply. In most instances, however, where death of the patient does not supervene, localized death of bone

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gives relief to the patient, while the surgeon is at his wits' end to terminate the long suppurative process.

The organism found is usually the staphylococcus aureus, which would seem to be expected. Occasionally a strain of streptococci may be found, but this organism does not have the wandering or metastasizing properties of the staphylococcus, usually causing trouble by local reaction or through the lymph stream.

The clinical picture of acute hematogenous osteomyelitis is fairly characteristic, although there may be some obscuring or complicating condition to mask the symptom complex. Just as there are those of us who still on occasion give a purgative in acute abdominal pain so we may sometimes be tempted to treat pain in or near a joint with salicylates, etc.; but we should remember always that just as the giving of a cathartic has complicated many a simple appendix, so valuable time may be lost in medical treatment of osteomyelitis. The time to recognize and attack acute hematogenous osteomyelitis is at the onset, during the stage of inflammatory reaction and before the actual death of bone takes place, for it is only during this period that conservative surgery will avail.

In most instances the diagnosis rests on a rather clear-cut story. The average case occurs in a child between two and ten years of age, who has bad tonsils, bad teeth, or possibly an insignificant skin infection. Exposure or traumatism may play a part, although the injury may be so slight as to be altogether forgotten. As a rule, persistent, localized pain near a joint is the first symptom, which is quickly followed by a chill, with temperature up to 103 or 104, and the usual symptoms of toxemia, such as vomiting, dry tongue, headache, etc. The blood picture will show a marked leukocytosis, 20 to 30,000, with a corresponding increase in the polymorphonuclear leukocytes. It is at this stage that recognition of the disease and prompt treatment will save much time and suffering to both patient and physician. Unless proper treatment is inaugurated at once, redness and edema become marked in the soft parts, and there is a corresponding increase in the toxemia, as well as local destruction of bone. To quote from Starr, "The diagnosis must be made on signs present. Severe pain in the neighborhood of a joint, with a spot of tenderness, in a growing child is extremely significant. If it is accompanied by high fever and rapid pulse, with high blood count, the diagnosis is moderately certain."

Let me emphasize here that the X-ray is useless at this stage of the disease, and may even be misleading. By the time gross changes can be demonstrated radiographically, the opportune time to inaugurate treatment will have passed.

The diseases from which acute hematogenous ostemyelitis must be differentiated are acute articular rheumatism and acute infectious arthritis. In the former there is less constitutional reaction and more localized pain confined to the joint itself rather than to the neighborhood of the joint. There is immediate joint swelling and much less severe pain, with a more gradual onset. In arthritis, there is more joint fixation from muscle spasm, with the swelling limited to the synovial membrane of the joint.

In our own study of 23 cases from the records of Touro Infirmary, summarized by Dr. A. B. Pitkin, we find that eight patients were admitted without any diagnosis having been made. Four were sent in with a diagnosis of chronic osteomyelitis, and the remaining eleven were variously classified as "intestinal upset," rheumatism, typhoid fever and tuberculosis. The duration of the disease before admission varied from three days to five years. The X-ray diagnosis was positive in all of the old cases, but showed nothing up to the third day in any case, at which time there was already marked bone destruction. The stay days in the hospital varied from one—in a patient with a small focus in the oscalcis, which was easily removed with a curet—to 84. All of these patients were discharged still unhealed.

I believe most of us are prepared to accept the pathological picture as already presented, and can visualize the process as a true bone abscess, analogous to any other abscess except as to the special tissue involved. The soft

parts accommodate swelling to a greater or less extent, but unyielding bone cannot swell. There is consequently but one outcome to bone inflammation, and that is necrosis from local anemia. This local death of bone and the profound toxemia can be combatted only by following the old surgical adage, "ubi pus ibi evacua." There has arisen some discussion as to the propriety of following Starr's suggestion of simply opening the periosteum in early cases. The writer would prefer going a step further and making several drill holes in the cancellous bone structure in these cases, or even opening the marrow canal with a trephine where this is indicated. The instrument armamentarium would be very simple. A small carpenter's gimlet added to the surgeon's pocket case and used under aseptic precautions might be the means of saving a great deal of disability and cutting down a needless mortality.

Kellogg Speed has called attention to the disturbance of growth following osteomyelitis in growing children. This would remind us that the maintenance of normal longitudinal bone growth is dependent on sufficient blood supply in the region of the epiphysis, and while Starr suggests that holes be made in the cancellous bone in the direction of the epiphysis, this latter must not be injured. Our drill holes must be in the metaphysis, but not through it.

Should the opportune time for the inauguration of treatment be passed, however, we then have to deal with an entirely different phase of the disease, and it is here that surgical skill and ingenuity may be taxed to their uttermost. Once actual death of bone has occurred, the subsequent handling of the case will depend on the rapidity of the spread of the infection, and whether or not there has been an early perforation of the cortex with localization of the infection. Radical treatment varies all the way from simple removal of the sequestrum to complete excision of the shaft of the bone involved. Moreover, the infected cavity left after the removal of the sequestrum varies in extent and in the amount of the surrounding infection, and may require an extensive use of the curet and chisel and the removal of a sufficient amount of bone to require later some plastic procedure, or even a bone graft.

The best method of filling the bone cavities left after such operations has been the source of much speculation. The various plasters, waxes and bone chips have all had their day. Lining the cavity with skin, as suggested by Neuber, is a valuable procedure if the infection has been entirely eliminated; but this, like all other procedures, is destined to failure in the face of infection. Bancroft has shown that we may be more conservative since the infection can be controlled by the proper use of Dakin's solution, and there are even some instances in which with this method of treatment the sequestrum has become reorganized and healed in place.

Since the experience of army surgeons has been so valuable in the application of Dakin's solution by Carrel's technique in bone suppuration, the writer would advocate the use of this method, which has been most helpful in his own personal experience. The bone cavity treated in this way will usually fill with healthy granulations, which in turn become covered by epidermis. This is in most cases followed by a reproduction of new bone to fill in the cavity. The subject of bone grafting is a chapter unto itself, and will not be touched on here.

In conclusion, let me urge early diagnosis and prompt operation in acute hematogenous ostemyelitis. In this way alone, we can save life and preserve function.

When in doubt, early exploration under aseptic precautions can do no harm, and if a trephine or burr is not at hand, several holes made with a carpenter's gimlet may be sufficient to limit the process.

In chronic cases, the use of Dakin's solution by Carrel's technique will give good results and limit the extensive use of the chisel with the subsequent necessity of bone grafting.

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DISCUSSION

Dr. John Oeschner (New Orleans): It is more particularly of the acute condition that

I wish to speak. To those of us who see much osteomyelitis there are certain conditions that are absolutely axiomatic, and I had hoped that the general practitioner was sufficiently conversant with the symptomatology of osteomyelitis to know that it has its corollary in appendicitis. There is only one treatment in the acute condition, just as in appendicitis. There is certainly no general practitioner who being faced with pain located over McBurney's point, chill, high temperature, total leucocyte count of anywhere from 10,000 to 30,000 would hesitate for a moment to cut into the abdomen and take out the appendix. Anybody who would would be regarded as a medical idiot. And yet we are permitting our children suffering from osteomyelitis to lose bone, to lose joints, to lose life itself, simply because we are afraid to tackle the job. What do we have? A child, usually between two and ten, and on up to adolescence. This child has a chill, high temperature, leucytosis. What is it? It is an infection. Where is it? When it occurs in the region of the appendix, it is appendicitis. But where do we have complaint of pain? Invaribly at the end of one of the long bones, and what happens? The infection travels, usually the infarct takes place at the epiphysis, and there pain is complained of. You will have swelling, and redness, and heat. There is no possibility of the infection going into the soft tissues—you cannot do it. But in three or four days Nature has done what you could not do—it has worked through and made a sub-paretal abscess, and then the variest tyro in medicine could take care of it. It does not require any special education. The abscess is opened—and the doctor is a big man. But the bone has been irreparably damaged, sometimes has to be removed, and sometimes the joint is involved.

What should be done? As in the appendix get the pus out, for in seventy-two hours—in twenty-four hour, the damage is done for all time. Cut down over the site of the pain and with a trephine go in and take off two or three little plugs of bone, but do not bother the marrow.

Dr.Isadore Cohn (New Orleans): I do not know that I have ever heard a presentation so concise, so definite, and so much to the point as this of Doctor Maes, and of so much value to most of us.

Doctor Oeschner in his discussion touched some interesting points, but he did not go far enough. He said after a few days pus gets out and forms an aabscess, then somebody opens the abscess, and he is a big man. Gentlemen, I think he is a little man who does that. If he does not go in where the infection started the medulla he has not done enough. The time to make a diagnosis of osteomyelitis, as Doctor Maes has beautifully put it, is before the X-Ray can help us. Those who sit down and depend upon the X-Ray might as well do nothing. You cannot depend on it.

The trephine is a good instrument, and does little harm, but the simplest of all measures is possible in a well equipped hospital where you have a motor-driven drill and can make two or three openings and drain the abscess. Please throw your curettes away. Put them in a museum. If you use a curette you are simply scraping off some of the cells which are protecting you. Whether you use Dakin's solution, or whether you use dichloramin, or whether you use anything—as long as you have the abscess drained you have done your duty, and the main thing to remember is that since there is pus along the periosteum there is certainly pus in the bone.

We have all seen people using gouges, and mallets and chisels to get into the bone. The cause of death in fracture of the long bone is fat embolism. The first pathological change that takes place in the medullary canal is fatty degeneration. If we use a gouge and mallet we are forcing fat globules into the circulation and increasing the chance of fat embolism.

Let us not forget the many complications that may arise, and when we see these patients do not wait for the X-Ray to help us.

Dr. S. C. Barrow (Shreveport): I want to correct one little error. The paper states that the X-Ray is of absolutely no value, and it has been likewise stated by those who discussed the paper. Radiologists will admit that the X-Ray has no value in osteomyelitis to the extent of demonstrating that there is an osteomyelitis, but I will gamble that these gentlemen who discussed the paper invaribly have an X-Ray examination, if only for the purpose of excluding injury or trauma to the bone, excluding arthritis, and various other things. An X-Ray examination, even though negative, is of as much value as when positive. I do not presume to tell you that we can show you an acute, osteomyelitis, but we can tell you in all cases that there are not other things that no doubt will confuse you.

Dr. Urban Maes (closing): I want to say that Doctor Barrow's point is well taken. We all have X-Ray pictures made, but we use them in a negative way.

THE VALUE TO THE GENERAL PRACTITIONER OF X-RAY EXAMINATION OF THE STOMACH AND DUODENUM.*

BY ADOLPH HENRIQUES, M.D.
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Little did Roentgen, the discoverer of the X-ray, realize, at the time he made his monumental discovery in 1895, the broad field of application which was to follow.

Today the X-ray is used in every civilized country of the globe both as an aid to diagnosis and in the growing field of therapy.

If you look over the list of scientific exhibits at this meeting you will note that, of a total of 56, that 13 are entire

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X-ray and that three additional exhibits are partly radiographic, a very high percentage of the whole exhibit.

In no phase of X-ray work has there been more definite and certain strides made than in the study of the digestive tract.

With thorough, careful study it is now possible to determine the presence of 90 to 95 per cent of organic lesions of the stomach and duodenum. A negative diagnosis may be made in an equally large percentage of cases. Dr. Will Mayo said that in health one should be able to eat anything and even throw in an old shoe besides without feeling any inconvenience from the stomach. This agrees with the teaching of some of our leading internists among whom I may mention my chief in medicine, Dr. George S. Bel.

When a patient comes in complaining of indigestion, only too often the poor stomach is blamed off hand and the patient becomes a human drug store—pound after pound of chemicals, pint after pint of liquids poured into the protesting organ.

Some one has termed the stomach the greatest liar of all the organs of the anatomy. It has been referred to as the alarm box of the body.

How many patients have been dieted and fasted for a peptic ulcer when the trouble existed outside the stomach. On the other hand how many individuals have been labeled chronic dyspeptics and consigned to indefinite invalidsm when a real lesion of stomach or duodenum could have been definitely located and relief secured by skillful surgery.

The practice of medicine is tending to become more and more scientific. If, in the examination of our cases, our findings can be made objective and if the subjective phenomena minimized as a basis of diagnosis then will diagnosis reach its highest scientific attainment.

The principle advantage of X-ray examination exists in the fact that the findings are objective. A thorough examination of each part of the stomach and duodenum permits the careful, painstaking, trained Roentgenologist to state with reasonable assurance that an organic lesion of the stomach or duodenum does or does not exist.

In order to determine the presence of abnormalitis in the gastric or duodenal wall, it is necessary to be familiar with normal appearances. I find that the greatest source of error for beginners in Roentgenology in making interpretations is that they are unacquainted with the normal stomach. As an example of this, I put the question to my students beginning their course in X-ray as to what was abnormal about the appearance of a certain stomach. There were eight answers each one stating an abnormality. I could see not even one.

The stomach is subject to so many variations of position and peristalsis that anyone seriously considering taking up this work should spend several months at least in the study of the normal and its variations. Otherwise both the Roentgenologist and the physician relying upon his report will be subjected to many needless embarrassments.

If this has happened to you, do not blame the X-ray for the fault lies rather with the one using it.

At least 85 per cent of the value of the X-ray in diagnosis is in the correct interpretation of the shadows cast by it upon the screen or plate.

In making the X-ray examination the routine I have adopted begins with a preliminary fluoroscopy of the patient's chest. Then the oaesophagus, the fundus of the stomach, the median portion, the pyloric antrum, the pylorus itself and the duodenum are studied in turn. Care should be given to each part of the stomach as though one were dealing with several organs.

It is possible to identify definitely the pylorus as such, one sees the shadow produced by the muscle between the pyloric antrum on one side and the duodenum on the other. The determination of the location of an ulcer, whether post-pyloric or prepyloric is an added advantage as ulcers of the duodenum are so seldom found to have a malignant process engrafted upon them.

In my own experience the fluoroscope has been more satisfactory than the skiagraph. It permits examination from many angles. One can associate palpation with fluoroscopy and note in many cases the relation of palpable masses to filling defects in the gastric outline. Also through the abdominal

wall the stomach may be moved about and many spasms, especially about the pyloric antrum, may be overcome; besides the flexibility of the walls of the stomach may be determined in this way. This is an important point in suspected early maligncy of the stomach as in a small percentage of cases a gastric tumor may not project within the gastric lumen.

The examination of the digestive tract is not complete, however, without plates of the gall bladder region and an examination of the terminal ileum, appendix and colon.

At times, recourse is necessary to the use of the opaque enema which gives us a better idea of the walls of the colon, from just above the rectum as far as the caecum, than any other known method of examination outside of a most thorough exploratory laparotomy.

In conclusion: By a more accurate means of diagnosis of organic lesions of the stomach and duodenum which we possess in the X-ray, much misdirected treatment will be avoided when the stomach and duodenum are not at fault. On the other hand, many cases which are classified as chronic dyspeptics will be restored to health by the recognition of an organic lesion and its relief by the skilled surgeon.

DISCUSSION

Dr. S. C. Barrow (Shreveport): This is a subject that should be brought before the profession whenever possible. I was asked by a physician yesterday, a man who knows medicine well, if the X-Ray was of any value in the determination of gastro carcinoma. I have again been asked if by the X-Ray we could determine the presence of a simple pyelitis. These questions indicate a lack of information on the part of the profession generally as to what the X-Ray will do,, and one of the most important points for the profession to know is in just what conditions the X-Ray is valuable

We had a treat in December hearing Dr. Carman read a paper in which he reported 523 cases of duodenal ulcer which were diagnosed by the X-Ray and 520 found to be correct. It does not interest you how the examination is made, or the technique used; the thing that interests you is the fact that a correctly made and interpreted X-Ray examination in these conditions mentioned by Doctor Henriques will put you right in a large majority of cases. We cannot all attain the proficiency of Doctor Carman, but with reasonable care and skill we can detect the large majority of these conditions.

Dr. A. A. Herold, (Shreveport): From the standpoint of the internist, I would like to say a word or two about this most important means of diagnosis. I recall a case in which we were in doubt whether it was duodenal ulcer or gall bladder infection. The report of the radiologist was in favor of duodenal ulcer. At the same time the man was undergoing treatment with another man for gall bladder infection. We got together and decided that it might be both. This man went away[1] a good many miles to be treated by a gastroenterologist in a distant city, who made a diagnosis of colitis, but he did not cure him. He came back for further treatment for duodenal ulcer and gall bladder infection.

Too often these patients will go from doctor to doctor until when we go to look for the real trouble we have to call on the radiologist to help us out in our dilemma. And it is not so much the technique of the radiologist, as his ability in interpretation, as Doctor Henriques has emphasized.

Dr. E. Denegre Martin (New Orleans): It is singular the impression that prevails, especially among the practitioners away from the large centers, who are not familiar with X-Ray work. The general impression seems to be that all you have to do is to send the patient to the radiologist, and a diagnosis will come back. For myself, I depend much on the radiologist. But the history must go with the case. It is just as important that the radiologist should know the history as to know the technique of taking the picture. We have many times been misled when the diagnosis was not confirmed, and I believe many of these instances are where the history has not been taken.

I am afraid we are going a little too far today on the laboratory side. As long as scientific medicine is in the hands of the scientists it is all right; but we are not all scientists, and I am afraid we are depending too much today for diagnosis upon the laboratory, and are forgetting examination of our patients, getting the history, and putting the two together. Our laboratories should be for the confirmation of diagnosis, and not for the purpose of making diagnosis on which the surgeon may operate. I have as much faith in the X-Ray apparatus as anybody in the world. There is not a day that I do not use it. But we must not depend upon it exclusively.

Dr. Adolph Henriques (closing): I wish to thank Doctor Barrow for his discussion. As I said, the method is objective, and at least 85 per cent of the value of the method depends upon correct interpretation.

FULL TERM ABDOMINAL PREGNANCY (A CASE REPORT).*

BY LUCIEN A. LEDOUX, M.D.
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The occurence of full term abdominal pregnancy is rare. To operate and deliver a living fetus is unusual. The case I am reporting tonight presents several phases of more than ordinary interest.

In the July, 1922, issue of Surgery, Gynecology and Obstetrics, Dr. P. Graffagnino, of New Orleans, reported that from 1906 to 1920 there was on record at the Charity Hospital of Louisiana, eleven (11) cases of advanced abdominal pregnancy; since that time two cases have been added and in both instances we have had the good fortune to have both of them come under our observation.

After reviewing this record, I have briefly classified them as follows: (a) Primipara, 5; (b) Multipara, 4; (c) unclassified, 3; all cases were colored women. Fifty per cent occurred in women between the ages of 26 and 30. The youngest was 20, the eldest 90. Eight of these cases were full term foetuses, one seven months, the other four months; additionally a case of twins, period of gestation not stated; two unclassified; one deserted before operation. Of the 12 cases recorded, two (2) were viable foetuses; one (1) died a few hours after birth, the other was discharged and at last reports was living and well. Nine cases were discharged as well; three (3) cases died.

Jane P., colored, age 28 years. Admitted to ward 39, Charity Hospital, March 10, 1923, complaining of vomiting since last August, feeling of fullness in lower abdomen and pressure on the rectum. Headache, backache and constipated.

F. H. Negative for syphilis, T. B. and cancer.

P. H. Usual childhood diseases, otherwise negative.

M. H. Menses at 14 years of age. Regular, 30 day type, duration 4 to 6 days, color normal, flow moderate, no dysmenorrhea. Last menstrual period, July 1st to 15th; patient is not sure as to exact date.

P. I. Last August patient began having vomiting spells which have continued to this time. About a month ago, patient took some sort of purgative and shortly afterwards noticed that her baby was lower than usual. She states, tho, that she has carried low all along. Her bowels are badly constipated and she has to resort to castor oil to get results.

Phy. Exam. Shows a colored female, very poorly nourished and skin rough and dry.

Head: (Eyes) Pupils equal and regular, react to light and accommodation. No edema found.

Mouth: Teeth in bad condition. Tongue coated; tonsils hypertrophied.

Neck: No glandular enlargement.

Chest: (Lungs) Respiratory rate and breath sounds normal. (Heart) Enlarged to the left, strong and forcible systolic blow at the apex which is not transmitted.

Abdomen: Enlarged an ddistended. Foetal parts found to extend to the umbilicus. Back of foetus appears to be low down and to the left. Foetal small parts generally felt over abdomen to pubis.

Vaginal examination: Bulging of post-vaginal wall is noted, cervex found very high, behind the pubis. Cervix is soft, but will not admit one finger.

X-Ray of case of Full Term Abdominal Pregnancy. This picture was taken several days before the operation. Of interest is the low level of the foetal vertex.

Rectal: Foetal head is found to be encroaching upon the rectum, and the vagina, in the cul-de-sac as far down as the coccyx.

Diagnosis: Full term pregnancy, foetus viable. Vertex, occipito-posterior partially incarcerated.

Her temperature on admission 99 degrees, pulse 110, urinalysis 3-14-23, negative except for few hyaline cases. Coagulation time 4 minutes. B. P. S. 190, D. 110, Wassermann negative.

X-Ray report: Enlarged size and density foetal gravid bones. In addition, as you will see, the plate shows that the pelvis was amply large enough for the passage of the head and the vertex is very low, lying near the level of the bi-ischial line. The case was examined by Dr. Kostmayer and members of the Staff and we agreed that in all probability it was a case of relaxed uterine wall, which allowed the head to sink low into the pelvis; possibility

*Read Before the Orleans Parish Medical Society, November 12, 1923.

of an extra-uterine pregnancy. We decided to note case closely and be prepared for vaginal hysterotomy.

Progress Notes: 3-10-23: Head low in cul-de-sac and resting on coccyx, cervical os found with great difficulty. Cervix pointing upwards.

3-14-23: External os, two fingers dilated, general condition good.

3-15-23: 9 A. M.: Few cramp-like pains are felt in lower abdomen. 4 P. M.: Pains are becoming more regular and more like labor pains. No show. 6 P. M.: Pain more frequent, every 2-3 minutes, duration 15-20 seconds, similar to labor pains. Perineum beginning to bulge and upon rectal examination there is found to be a definite attempt to expel the foetus.

8 P. M.: I saw the patient and ordered her prepared for operation. Patient was prepared for plastic work. Under ether anaesthesia it was found that the vertex was pushing through the recto-vaginal septum. The cervix was found high up, anterior, behind the pubis and above the bladder, soft and internal os persistently closed.

Vaginal hysterotomy and forceps had been decided upon, but in view of our findings, an extra-uterine pregnancy, median section was done.

Operation 3-15-23: Median incision about 6 in. long, middle of incision at point of umbilicus. Skin, facia and peritoneum very thin and adherent. Peritoneum opened at level of umbilicus; dark brown colored omentum bulged out, followed by a portion of transverse colon. The uterus was not visible. Hand was introduced into abdomen and foetus found lying free in the abdominal cavity. The membranes were found ruptured. Male foetus delivered, which breathed and cried immediately. Color somewhat cyanotic. Cord clamped and cut. Placenta and membranes, which were bile stained, found adherent to the right tube, broad ligament, caecum and under surface of the liver. The fimbriated end of the right tube was the point of origin of the umbilical cord. There was no abdominal bleeding. The uterus was in normal position, purplish colored and soft, and about the size of a three months pregnancy. Both tubes, though enlarged, were normal. Ovaries normal. Removal of placenta was deemed too harzardous and was left in situ with a firm pack about the base.

Presentation-vertex-position R. O. P.

Weight of child 7 1-2 pounds.

Abdomen closed according to usual technique with silk-worm and catgut sutures. Drain and lap six at lower angle of wound. Patient did fairly well throughout and there was no bleeding from the cut skin surfaces.

The following day the condition of the mother and child was excellent. Succeeding days showed satisfactory progress, with free drainage. The drain and pack were removed by the end of the fifth day. Patient was given water and sugar freely. Temperature averaged normal, pulse 95. On the 25th ten days after operation, the patient's temperature rose to 103, pulse 120, followed by a severe chill. The course that followed was typically septic; became distended and showed all symptoms of a general peritonitis. Her condition progressively grew worse and she died March 31st, 16 days after operation. I was able to get a partial autopsy. The abdomen contained straw colored fluid and there was evidence of a moderate grade general peritonitis. The placenta was found attached to the fimbriated end of the right tube, post surface of right broad ligament and appendecial region of the caecum. About half of it had become detached and seperated by organized blood clot. All evidence of umbilical cord and membrane had disappeared.

The baby was discharged on the 12th day and at last report was doing very well.

DISCUSSION

Dr. S. M. Blackshear: I would like to ask the Doctor why he had not removed the placenta? It seems to me he would have removed it after taking out the drains.

Dr. E. L. King: I think I can answer Dr. Blackshear's question. It is pretty well established that the removal of a placenta in the case of a pregnancy such as this (i. e. with a living child) is dangerous. There is danger of fatal hemorrhage from the vessels of the placental site. In the reported cases where the placentae have been removed there has been attachment to the uterus or to the broad ligaments, or to both. Under such conditions, it is better to do a hysterectomy, removing uterus, broad ligament (or ligaments) and placenta en masse. The only other way to handle the situation is to leave the placenta alone. In case the foetus has been dead for some time, removal of the placenta is simple and free from risk.

Recently a case was reported (Practical Medicine Series, Chicago, one or two years ago) in which the placenta was left intact and firmly attached in the cul-de-sac; the abdomen was closed without drainage. The operator reported on the patient's condition one year later. The placenta was still there, and was not giving any trouble. Its ultimate fate has not been determined.

The advisability of drainage in such a case, with the placenta left undisturbed, is possibly open to question, but it has always been the custom.

Dr. H. W. Kostmayer: Dr. LeDoux's case came some three or four weeks after I had had a similar one. In the first case, the woman had foetal parts close beneath the abdominal wall. The X-ray showed an intra-uterine pregnancy; there was some doubt as to the diagnosis. The Radiologist reported an intra-uterine pregnancy. On X-ray examination, about the foetus, there was the uterine wall. The ultimate test in diagnosis is to find the uterus separate from the pregnancy on physical examination. The rest makes no difference. I saw this patient, and without having seen the X-ray, I found the uterine body lying in front, and to the right side. There was no doubt about that. I then went down to the X-ray room and studied the plate. I removed a dead foetus. This was the first of the two cases. This problem was simple.

When the other patient came along, I told Dr. LeDoux that some years ago Dr. Hidden,

of London, had told me of having opened the posterior cul-de-sac, put on Elliott forceps and delivered a baby, and after the 7th, 8th or 9th day the dried up placenta was pulled away. His case made an uneventful recovery. I told Dr. LeDoux I thought his case was somewhat similar.

It was decided to either split the cervix or split the cul-de-sac and remove the fetus. But on examination under anaesthesia the fetus raised up into the abdomen. The problem was difficult. An abdominal section was decided upon. In answer to Dr. Blackshear, the only thing that might be done is to go back into the abdomen about the 10th day. This seems worth thinking of. If you pack, most of them die of sepsis. I had a case in which I lost mother and baby, the mother from sepsis from a packed abdomen, and the baby from syphilis. It seems best that we should leave it in for all time or leave it in without packing and go in at a future time. This case was fascinating, following on top of the other one.

Dr. LeDoux (close): I think that Dr. Blackshear has been answered pretty well. The patient weighed about 95 pounds and was lucky to survive the anaesthetic. I thank Dr. King for assisting me in explaining this to Dr. Blackshear.

I am inclined to agree with Dr. Kostmayer that closing without drainage is the safest procedure. I have never been up against this type of case before, but I believe it is best to close.

In answer to Dr. Michinard. The cervix was very soft, but the internal os was found persistently closed.

As regards the psychic features of this case. She last menstruated about the 1st to the 15th of July and delivered about the 15th of March. She was about due.

In closing I want to emphasize two points: (1) the typical normal labor pains occuring at frequent intervals with bulging perineum; (2) as in a previous case the uterus was the size of a three months pregnancy. I have read reports of other cases and found that the uterus enlarged almost up to the 3rd month.

AN APPRECIATION OF SOME OF THE MODERN METHODS IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS.*

By Frank J. Chalaron, M.D.
New Orleans.

Modern methods of diagnosis of syphilis date from 1905 when Schaudinn and Hoffman identified S. pallida as the causative organism of the disease, and thus made possible the positive identification of a lesion as a chancre in a minimal time. In order to realize the value of this discovery, we must remember that the diagnosis of the primary lesion had up to that time been based on purely clinical data and observation. The period of incubation, the appearance of the lesion, its induration, or lack of induration, the accompanying non-suppurating adenitis, and the number of the lesions were in the main features in the differential diagnosis. That there existed a strong doubt as to the positiveness of the diagnosis even when all the symptoms were found in a given case is evidenced by the fact that many able syphilographers advised that no matter how typical the primary lesion, no treatment be instituted until the appearance of the secondary eruption. On the other hand, induration, copious suppuration, multiplicity of lesions, and healing after cauterization frequently led to a denial of syphilis to the sorrow and confusion of the diagnostician when a few weeks later the patient returned with a telltale secondary eruption.

Today the diagnosis of the primary lesion is based solely on the presence of the specific organism as demonstrated by the microscope or the complement fixation test. Contrasting the two methods the importance of the time saved in establishing adequate treatment is evident. We know that moderate invasion of the body by a few spirochetes preceeds or is simultaneous with the appearance of the primary lesion. This time gained means the practical certainty of crushing the disease in a year at most, as against the possibility of a cure after two or more years.

Of the means at our command to demonstrate the S. pallida in a lesion or its satellite bubo I will discuss the best.

The Dark Field.

By this diagnostic method it is possible to identify 65 per cent of genital lesions as chancres on first examination. Only 14 per cent of those in which the organism was not found gave a positive blood Wasserman at a later date. However, the dark field examination has requisites which discount its value to the general practicioner. It demands a certain amount of technical skill in the proper adjustment of the dark ground illuminator and in the differentiation of the spirochetes and what is more important it requires either bright

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sunlight or an intense artificial light. It should therefore be reserved for the specialist or the laboratory worker.

The Fontana-Tridondeau stain. This method is practically as accurate as the dark field over which it has advantages commending it as the diagnostic method of choice to the physician who makes his own examination. Simplicity of technique easily obtainable in ingredients, rapidity of procedure, and finally the fact that slides may be kept for 24 hours without affecting the result of the examination warrants its description.

After cleansing the field with a saline solution or distilled water, serum is made to ooze from the suspected lesion by rubbing with a piece of moistened gauze, or by gently scarifying the edges with a needle. After waiting a few minutes, enough exudate is obtained to make two or three slides. The serum is taken up and spread in a very thin layer with a platinum loop or an ordinary wooden toothpick. The slides dry very quickly depending on the thickness of the layer. Sol. No. 1 Dehemoglobinizer — (acetic acid 1, formalin 2, distilled water 100) is allowed to run over the slide for one minute. Sol. No. 2 mordant (tanic acid 5, distilled water 100). This is applied and the slide is warmed over the flame for one minute washing off in tap water. Sol. No. 3 stain (Nitrate of silver 20 per cent sol. add drop by drop strong ammonia until precipitate is redissolved ered and solution has a slightly opalescent appearance.) Apply cold for one minute, then warm over flame for ten seconds; wash in distilled or cistern water and either dry in air or by moving in warm air over flame. Care should be taken not to boil when warming as an excess of heat causes the spirochetes to lose some of their identifying convolutions. The organisms appear black on a yellow background. If the lesion has been treated locally with mercurials or caustics which kill the superficial organisms and give negative slides, the application of normal saline compresses for 24 hours will freqeuntly bring back the spirochetes to the surface. It may be that in spite of the last procedure the slides remain negative. Then puncture of a gland in the satellite bubo as advocated by Schultz must be resorted to. With a hypodermic armed with a fine needle two or three drops of sterile normal saline sol. are injected in the most prominent gland of the bubo. The needle is rotated in the gland a few times to produce exudation of glandular secretion then by aspiration the injected saline is withdrawn and spread on the slide for examination. Gland puncture has given positive findings in 50 per cent of cases in which the dark field had previously failed to show spirochete pallida.

Klauder and Kolmer, and later Fuentes, found that exudate from chancrous lesions gave a uniformity positive W. R. Even in cases where mercurials had been applied and in which the blood W. was neg. The importance of this additional aid in the early diagnosis of syphilis can not be over estimated, since neither contamination nor local treatment affect it and it is present before the blood gives a positive reaction. It is in those cases where other diagnostic tests have failed that it should be used. The authors state clearly that this procedure should not supersede the use of the dark field but should be used only in neg. cases. It would seem that if Klauder and Kolmer's findings are confirmed by other observers, a great step has been made in our ability to express a decided opinion as to the positiveness or negativeness of a suspicious lesion. There is a small percentage of cases which while presenting the clinical appearance of a chancre are persistently negative to all other tests. It is customary under such conditions to reserve the diagnosis until lack of secondary manifestations; repeated negative blood tests have proved their non-sylpilitic nature.

The Wassermann Test.

This test was presented to the medical world by its author in 1906, and was considered as a specific variation of the complement fixation test described by Bordet and Gengou earlier in 1906. It was not very long before various research workers showed that the test was not only not biologically specific, but that it had an average error approximating 30 per cent. While this demonstration of its deficiency stimu-

lated research for a more accurate technique and undoubtedly greatly increased its degree of accuracy it brought forth a great number of modifications of the original test and a voluminous literature. Many of these modifications were of no value, and have been discarded as such. Others have gained favor and are still in use, producing because of their differences a lack of uniformity in results, which is to say the least very disconcerting to the clinician. The most able serologists have given their best thought and most earnest efforts to clearing of this confusion, in their endeavor to standardize the W. R. Kolmer's work along this line is the most complete and comprehensive, and though it covers six years arduous work it is not yet finished. The W. R. has given as high as 98 per cent of positive results in untreated cases; yet it must be remembered that this high average of accuracy is not obtainable by all serologists and that implicit reliance should not be placed in it. Broeman has emphasized the tendency to rely largely on laboratory methods for a diagnosis rather than on the history of the clinical evidence. Correlation between the W. R. and the clinical findings is essential to a correct diagnosis. As valuable as is this test, much damage is being done by its injudicious and ill-timed use, especially when the report of a negative reaction establishes in the patient's mind the belief of a cure and causes the too early cessation of treatment. Quoting from Kilduffe: "A negative R. means that there are no foci of spirochetes sufficiently active to bring about the formation of a detectable amount of reagin in the blood; hence as an indication of complete removal of treponemata at a given moment a single negative W. is useless." At all times when tests are being made the patient should clearly understand that these tests are undertaken with a view of following the progress of the treatment and that their value lies in their interpretation when compared to sufficiency of medication at that time.

It must be noted that certain other conditions than syphilis give positive reaction (yaws, leprosy, pneumonia) and that alcoholism and anesthesia may cause false negatives. While weakly positive R. are diagnostically of doubtful value a strongly positive R. (yaws, leprosy excluded) obtained by a competent serologist means spyhilis in 98 percent of cases. In the interpretation of the W. there should exist the fullest collaboration between the clinician and the serologist if the maximum of accuracy is to be obtained. When the W. does not conform with the clinical evidence, the test should be repeated and checked by another laboratory before its dictum is accepted as final.

Limitation of time prevents anything but a most cursory discussion of the modern treatment of syphilis.

Just as the discovery of Schaudinn marks the opening chapter in the history of the modern diagnosis of syphilis so does Erlich's presentation of 606 in 1910 open that of modern treatment. Unfortunately Erlich's hope for a complete sterilization of the body by one curative dose of salvarsan was not realized. But that in salvarsan and its justly more popular improvement neosalvarsan he added materially to our therapeutic armamentarium is undeniable. The value of the arsenobenzols is greatest in the early stages of the disease, when the spirochetal invasion of the blood is compartively slight, and when their tripanocidal action can be used with telling effect and little fear of untoward accidents.

The administration of 606 without regard to the weight of the patient is a common practice which contravenes Erlich's plan of giving stated amounts of salvarsan for a certain number of pounds of body weight. Schamberg has shown that the minimum tripanocidal doses are .005 for salvarsan and .009 for neosalvarsan per kilo. of body weight. In the light of this knowledge, the practice of beginning the treatment of early syphilis with the doses totally inadequate in tripanocidal action seems irrational. Those small doses kill but few spirochetes and tend to establish a resistance to arsenic in the surviving organisms.

The plan of giving several courses consisting of six to eight doses of arsephenamin or neoarsenphenamin at weekly intervals reinforced by weekly intramuscular injections of mercury salicy-

late seems to be the favorite method of treatment adopted by American physicians. Confining observation to the use of the arsenical it is urged that this plan is only applicable to the treatment of early syphilis. In late syphilis, when pathological changes are common in the liver, the blood vessels, and the nervous system and there is more danger of arsenic accumulation a course of arsephenamin should not exceed four doses. The elimination of arsenic is progressive up to the fourth dose; after this there is gradual diminution in the process of elimination and a corresponding arsenical retention in the body. Disregard of this fact may explain the increase in the number of cases of severe dermatitis. The gratifying results obtained by Krefting (U. and C. review, October 1922) after 10 years experience in the treatment of syphilis with salvarsan alone have not been confirmed by other observers and the combination of intravenous injections of the arsenobenzenes with the use of mercurials is still the method of choice.

It is in the treatment of neuro-syphilis that some of the more radical steps have been undertaken by modern syphilographers and neurologists. This is easily understood when we recall that while syphilis was admitted as a possible etiological factor in some cases of tabes and of paresis it was not even suspected of being the sole cause of those morbid conditions. In spite of the great advance in our knowledge of the etiology, pathological anatomy, serelogy and treatment of cerebo-spinal syphilis many problems remain unsolved. We know that invasion of the cerebo-spinal system by spirochetes occurs at a much earlier date than had been thought possible some years ago. But do we know why in patients showing involvement of the nervous system the rest of the body escapes unscathed, or when the rest of the body bears the brunt of the attack the nervous system remains free from invasion. Some syphilographers explain this phenomenon by the theory that strains of spirochetes show a predilection for nervous tissue. This is still a debatable point which requires further elucidation and confirmation. In the treatment of neuro-syphilis, authorities are divided as to the best procedure. Fordyce and many other able clinicians favor the Swift and Ellis method for the introduction of medication into the cerebo-spinal system. Sachs and others prefer Durcum's method of spinal drainage immediately preceding the administration of a dose of arsphenamine. Bryne's method of injecting mercurialized serum into the spinal canal has some supporters. Ogilvie's method of introducing neoarsphenamine directly into the spinal canal is used by a few. Stokes uses this method to reinforce the Swift and Ellis treatment. In 1922, Corbus and co-workers describe "A new method for increasing the penetration of arsenic into the spinal fluid in the treatment of neural syphilis." Inspired by the work of Weed and McKibben who were the first to show that intravenous injection of hyper tonic saline solution caused a marked fall in the spinal pressure as well as a diminution of brain bulk, and Foley's study of the phenomenon in decompression hernias who had noticed that following the injection of hypertonic, salin solution the hernia recedes into the skull in about two hours. It occurred to Corbus that it might be possible by this method to increase the amount of aresnic that would be carried by the spinal fluid fatre intravenous injection. This procedure was carried out on 28 patients suffering from different manifestations of cerebo-spinal syphilis, and the results checked by pressure readings, serologic tests and careful estimation of the arsenic contents of the spinal fluid. All patients had been under treatment before coming under observation for the experimnt, and in all but one, the serologic findings were positive. Some of the patients obtained their first negative serologic finding after this treatment. Arsenic was recovered in the spinal fluid of all but two cases, and the pressure was normal in all the cases.

The method consists of administering intravenously 100 C. C. of sterile 15 per cent saline solution warm to 100 degrees. This creates in the patient a feeling of warmth which gradually concentrates in the lumbar region and disappears in about ten minutes. Six hours later when the flow of spinal fluid begins to rise from the choroid

plexus and perivascular spaces a full dose of neoarsephenamin is given intravenously. The patient is kept fasting and in bed beginning one hour before the saline injection, and though allowed to leave the bed is advised not to eat for three hours after the administration of the neoarsephenamin.

In conclusion, the method is simple, painless and carries no more risk than the usual intravenous injection. The patient is confined to bed for seven hours at the most, except when spinal puncture is made for purposes of examination of the fluid. Diffusion of arsenic in the spinal canal is more uniform than in other methods of spinal treatment. Personally, I have used this method in six cases and while I realize that so few observations are inconclusive, yet the improvement obtained in both the clinical symptoms and serological findings have determined me to give the method a further trial.

DISCUSSION

Dr. M. H. Foster (Alexandria): In view of the fact that the Mayo Clinic have announced recently that they are failing to diagnose 66 per cent of venereal sores examined as suspicious by the dark field method, we should hesitate considerably before we rush headlong when we look at a sore and conclude we have a soft chancre. This diagnosis is only arrived at at the Mayo clinic by repeated investigations and if necessary by a puncture.

I admit that at the beginning I looked at dark field investigation from afar, and tried to line myself up with various other plans of finding the spirochaete; but after running through all of them I have come to the conclusion that the dark field is the most reliable method of finding the spirochaete.

In regard to treatment, I have used several treatments, but since the intravenous method has come out I believe it offers a distinct advance. However, if we favor the exhibition of mercury as well as arsphenamin, there is another method which has a decided advantage, and that is the Otting plan, which depends upon the exhibition of mercury together with sulphur waters.

I hope we will remember the point brought out, and not make a diagnosis upon cursory examination,but make an accurate diagnosis and treat adequately afterwards.

Dr. Jeffrey C. Michael (Houston, Texas): Doctor Chalaron has given a very conservative presentation of this subject, particularly as regards treatment. On the other hand, I want to call your attention to what may seem a radical method of treating early syphilis. By early, I mean primary cases still negative serologically. This is the method advocated by Pollizer, of giving 3 maximum doses of salvarsan on three successive days, then following for six weeks with mercury salicylate every five days, grains one to two; and then a subsequent course of three doses of salvarsan. I have had personal experience with this method and I have been able to follow four cases through a year. None of these patients has given a positive Wassermann, and I believe these cases are cured, clinically as well as serologically I think this method in properly selected cases—in young, robust men who have no impairment of function of important organs—i sof considerable value as an abortive method in the type of case I have mentioned.

Dr. E. H. Ellis (Crowley): There is one class of cases which I wish to refer to, and that is the effect of late syphilis. Tabetics in the latter stages sometimes come to us in a deplorable condition, and the treatment I wish to refer to now is palliative, and in my hands has given the patient more relief than any treatment that I have given. I believe that this section here has been very slow to adopt the Swift-Ellis treatment of tabes, that is, neosalvarsan intraspinously. Not being able to use that, not having a laboratory at hand sufficient to prepare this method of treatment, I resorted to giving mercury intravenously, and I have three cases that I have treated that way—cases that had been given mercury subcutaneously and intravenously without any perceptable relief, the patients going down and suffering more and more insalvarsan and neosalvarsan intravenously, tensely all the time. I concluded to try mercury intraspinously on one case. I gave twelve doses at ten-day intervals, and there was great relief after the first dose. One woman when she came to the sanatorium was unable to walk, had to be carried up the stairs, and after three doses intraspinously she walks up the stairway and says she feels perfectly well. I gave her twelve doses intraspinously, and the last time I tried it I could not get into the spine—I do not know why. The two other cases received four doses intraspinously with marked improvement. All the cases were markedly improved after the first injection. This mercury is put up by Mulford, 1-24 grain intraspinously.

Dr. C. S. Holbrook (New Orleans): I wish to say a few words bearing out what Doctor Ellis has said. Treatment by intraspinous injection of mercurialized serum is good and is easily prepared. You may get serum in ampouls if you wish, and make your own. It has the disadvantage of being rather painful, more so than the Swift-Ellis treatment. The Swift-Ellis treatment is giving a dose of salvarsan, and a half hour later collecting 50 cc of blood. The first few doses the time interval is usually narrowed. The blood is taken under aseptic conditions and placed in the ice box; the following day the serum is separated and inactivated; then 25 to 30 cc of salvarsan are injected into the spine. This treatment must certainly be considered when we attack nervous syphilis, and there is one thing very definite, and that is that it relieves the pain of tabes. I do not think it will cure a general paretic. Some cases get improvement under the Swift-Ellis treatment that cannot be expected to do so under any

other treatment. In the past six months I have had a series of 75 or 80 cases, with no bad results at all and some results that could not have been obtained by any other treatment.

I wish to call you rattention to the Herxheimer reaction. The other day I had occasion to see a case that died following the injection of 6-10 grams of neosalvarsan. This patient had been given rubs of mercury for a month, and then after a negative kidney examination she was given 6-10 gram of neosalvarsan. Next day she was not feeling so well. I saw her in consultation about the third day, when she was unconscious with positive disturbances of reflexes and ankleconus. The patient died an hour or two after. It was a type of Herxheimer reaction. I have seen in the past two years two such cases that died, both following a small dose with no active disturbance at all.

Dr. Frank J. Chalaron (closing): In regard to the Pellitzer method, this method has been known and accepted by many men, but it certainly has not met with general favor among the profession. There is always the danger of acute arsenical poisoning if the doses are repeated so rapidly. We know that the greater part of the arsenic is eliminated in the first twenty-four hours. About fifty per cent, through the bowels, and 30 per cent through the urine; but what becomes of the rest? It has been proven by competent men that there is an accumulation of arsenic in the body after the fourth dose and that elimination decreases.

As to the treatment of Swift-Ellis and the Byrnes method, I discussed that in my paper. Of course the Swift-Ellis has the endorsement of, Fordyce, one of the greatest American syphilographers but on the other hand there is a class of physicians led by Sachs of St. Louis who object to the Swift-Ellis, and prefer spinal drainage. To those who have had but slight experience with the Swift-Ellis it is very fine. You give it to three or four cases and it works beautifully, then you get a reaction that makes you fearful and you give up the Swift-Ellis for some time. Your technique may be faulty, or it may be due to faulty preparation of the serum.

SICKLE CELL ANAEMIA (REPORT OF A CASE).*

By S. Chaille Jamison, M.D.
New Orleans.

The following case is reported because of the great rarity of this condition. So far as I can find from a search of the literature, the cases mentioned in Mason's article, appearing in the Journal of October 14, 1922, Volume 79, No. 16, are the only ones on record; three, his own case making four.

In the laboratories of Clinical Medicine, at Tulane University, thousands of blood smears from negroes have been studied during the past ten years, and we feel confident that the case reported here is the only one of this type that has occurred in this mass of material.

This patient was in my service at the Charity Hospital ten years ago, and we became deeply interested in the curiously shaped red blood corpuscles, and have been on the lookout for such cases since, but none have appeared. At that time, Herrick's and Washburn's cases were the only ones on record. I was familiar with Herrick's report.

Ida Milton: Colored Female 11 years old. Admitted to Ward 41, August 16th, 1912. Up to one year of age she was a healthy baby and gained weight in a normal manner; she was weaned at one year. Since that time she has always been sickly and thin. She has had none of the usual diseases of childhood, with the exception of measles at seven years. She constantly suffers from sore throat and headaches; frequently complains of aching pains in the legs and arms.

Between her first and second year, she had a very severe attack of "yellow jaundice" which lasted for several months. Since this primary severe attack, she has had mild attacks of jaundice and vomiting nearly every month. These attacks only last for a couple of days, but the stomach rejects everything and great weakness is apparent. During the vomiting the conjunctiva and urine are yellow tinged, but the stools dark. All of her life she has had fever and "dumb chills", according to her mother. Her bowels have always been regular; she has never had diarrhoea. The doctors of her native town, Lecompte, La., called the condition malaria. The father and mother are both in good health. There is no venereal history. The mother had malaria while nursing the child.

She comes to the service complaining only of weakness and shortness of breath.

Physical examination: The patient is a chocolate colored negro female child, fairly well nourished, but under developed. The mucous membrane of the buccal cavity is pale. The teeth are in fair condition. The tonsils are enlarged. The crypts well marked with pus exuding from one or two of them. The lymphatic glands are moderately enlarged all over the body. The lungs are negative. The heart is negative except for a soft systolic murmur, which is not transmitted. The abdomen appears slightly distended, but there are no areas of tenderness or rigidity and no fluid is present. The liver is palpable two finger breadths below the costal margin; the spleen is palpable; the kidneys are not palpable. The reflexes are normal. The urine was negative on several examinations except for a few hyaline casts. During the patient's stay in the hospital of about four months the temperature ranged from normal to 101; the pulse from 85 to 110. The blood pressure was not taken.

Blood Pictures: Jan. 27th, 1913 Hgl. 30

*Read Before the Orleans Parish Medical Society, November 12, 1923.

per cent to 35 per cent. Neutrophiles 44 per cent. Small lymphocytes 4 per cent. Large lymphocytes 33 per cent. Large mononeuclear leucocytes 11 per cent. Transitional forms 4 per cent. Myelocytes 3 per cent. Eosinophiles 0 per cent; basophiles 1 per cent. Neucleated reds 0. Total white corpuscles 14,900. Total red corpuscles 1,912,000.

January 28, 1913. Hgh. 30 per cent to 35 per cent. Neutrophiles 61 per cent; small lymphoctyes 3 per cent; large lymphocytes 26 per cent; large mononeuclear lymphocytes 4 per cent. Eosinophiles 0 per cent; basophiles 0 per cent. Transotionals 4 per cent; Myelocytes 1 per cent. Neucleated red blood corpuscles one for every one hundred white cells. Total white blood corpuscles 17,000; total reds 2,048,000.

January 30th, 1913: Hgl. 30 per cent to 35 per cent; total reds 1,624,000; total whites 17,000.

February 5th, 1913: Hgl. 30 per cent to 35 per cent; total whites 15,000; total reds, 1,856,000.

The case appeared to show nothing out of the ordinary until one examined the blood smears, when the curious configuration of many of the red cells became evident. Five or six of the corpuscles seen in every field of the oil immersion were crescenic, sickle shaped or long and narrow and pointed at both ends. The smears were studied rather carefully by Dr. C. C. Bass, Dr. F. M. Johns and myself, who agreed that they were unique in our experience. The corpuscles in this case seemed to us identical with those shown in the picture of other observers and published elsewhere.

DISCUSSION

Dr. J. C. Cole: I would like to vouch for the fact that Dr. Jamison had such a case, for I recall having seen the smears. I can add nothing more to what he has said, further than I think that when we get cases of this kind or any other case of scientific or unusual interest they should be reported at the time.

Dr. S. Chaille Jamison: I want to thank Dr. Cole for vouching for my case. Dr. Bass got me to report the case and I am here, unfortunately, at a time when he is away from the city at the meeting of the Southern Medical Association.

Unfortunately for science, the case did not die; at least we were not in a position to obtain autopsy. Unfortunately for the case, the mother took her from Hospital. It was one of those cases without known etiology. We suspected syphillis but the Wassermann had not taken the position it has at the present time. Did not find any Hospital records showing a positive Wassermann. I think it must have been a case of hereditary lues. There were not ova in the stools. As far as the blood picture went, on account of the lack of eneucleated corpuscles and her youth we could not make a diagnosis of pernicious anemia. We put it down as a case of secondary anemia. I tried to follow up the case. I wrote several postal cards, one a year ago, but received no answer.

PRACTICAL APPLICATION OF HIGH VOLTAGE X-RAYS.*

BY S. C. BARROW, M.D.
SHREVEPORT, LA.

The subject of high voltage X-Ray therapy has already in the last few years been so discussed and re-discussed that it is hardly possible now to touch on a point that has not been investigated and certain ideas established, in many instances definite facts established and laws formulated.

This does not mean that the science of deep therapy is now exact but rather by extensive study and experimentation a foundation has been laid upon which there will grow a really scientific X-Ray therapy.

By the term high voltage we mean voltage in the neighborhood of 200 K. V. or more and while this has only recently come into general use, we must not forget that voltage of this intensity was used by the pioneers with small m. a. in the old days of the static machine and induction coil. Years ago I saw X-Rays being used for deep therapy in which the back-up spark on points was 14 to 15 inches. Riviere reported in 1903 a case of carcinoma successfully treated by X-Rays, using a Muret tube backing up a 40 c. m. spark gap.

This is only said to remind us that high voltage therapy is not so recent as the general public and profession believe and that we can only expect results if administered in accordance with the laws which have been and are being formulated by truly scientific researches and not in the haphazard guess work of the past. The development of accurate measuring apparatus and facts determined as a result have done more to advance X-ray therapy and place it on a firm basis than the manufacture of high voltage machines. In fact the whole technique of deep X-ray thereapy has been changed because of the facts established, the result of accurate ionization measurements in the depth.

In the beginning it would be well for us to remember that it has never been proven and few claim that there is any difference in the biologic action of X-Rays produced by 200 K. V. and those

*Read Before the Louisiana State Medical Society, April 24-26, 1923.

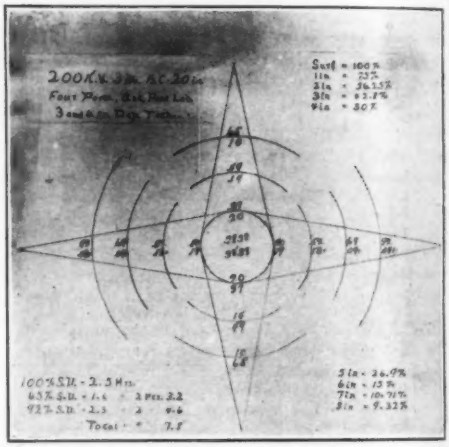
by 100 K. V. providing the same energy is delivered to the cell. The detailed work of Kroneig and Fraedrick has definitely settled this point and they summarize their results in these words: "Within the limits of hardness of radiation investigated (X-Rays filtered through 3 m. m. of aluminum and X-Rays filtered through 1 m. m. of copper) the intensity of the biologic action is practically independent of the hardness of the rays, the intensity of the biologic action is only dependent upon the radiation energy absorbed.

A lesion on the surface will respond in the same manner to X-Rays generated by high voltage as by low voltage and so a lesion in the deep tissues will respond in the same way providing the same radiation energy is delivered to the part. Again it has been proven and now accepted that only a small part of the X-Ray results produced in the tissues is due to the primary beam but rather to the scattered and secondary radiation and a phenomena known to us all since the early days is that scattered and more secondary rays result when high voltage is used than low voltage. The action of the primary rays is an indirect one; the biologic action being produced by the beta corpuscular elements set up in the tissue. The result of the primary radiation. A self evident fact also exists that these beta corpuscular elements are more numerous at the point of impact of the primary beam than distant from it, hence the only logical conclusion will be that more intense effects result when the primary radiation is accurately focused than when indiscriminately applied.

The question then naturally presenting itself first to our minds is why use high voltage? In a few words but accurately, the answer is: Because we can do the same thing more quickly, more precisely and with more certainty than when using low voltage.

It is my opinion that the man operating a machine capable of generating 140 K. V. can do in most cases as successful work as the one operating with 200 K. V. providing he comprehends the basic principals and uses a technique necessary to deliver to the depth the proper amount of measured radiation energy. A comparison of the depth doses gotten when operating with 200 K. V. with those attained by using 140 K. V. is convincing evidence of the advantage in using the former. The use of the lower voltage necessitates multiple ports and necessarily renders more difficult, more hazardous and more inaccurate the delivery of the proper depth dose.

By the use of modern apparatus it is now possible to determine accurately the exact amount of radiation which reaches the deep tissues compared to the amount delivered to the surface. The ionization effect of X-Rays is in direct proportion to the quantity and the same amount of ionization in the tissue results in the same biologic action regardless of



Showing Uniform Radiation of Pelvis using H.V. X-Ray alone

whether a high or low voltage is used.

The various measuring apparatus now in use, all of which are based on the same principal—the electroscope response to ionization—enable us to tell the exact per cent of surface radiation which reaches various depths in the tissue, and by simple mathematical calculations we can devise formulae which will give us the required dose at any depth. The use of ionization measurements has established the following facts which we must hold in mind and which form the basic principles of deep thereby:

(a) The greater the T. S. D. the greater the proportion depth dose.

(b) The larger the port of entry the larger the depth dose.

(c) The greater part of the depth dose is due to secondary radiation.

(d) That the higher the voltage used the greater is the proportionate depth dose.

(e) The biologic action is dependent on the quantity rather than the quality of radiation.

Here I would urge the necessity of everyone doing high voltage therapy having access to a measuring apparatus of some type for the testing of his own apparatus and the devising of formulae for administering different doses. To blindly follow the curves, twists, turns and silhouettes now so common, is to invite disaster as surely as will the practice of treating so many hours because the manufacturer says so.

The skin tolerance is yet and doubtless always will be a barrier and limit to radiation and forces us to a cross-fire attack in the use of high, the same not so difficult, as in low voltage X-Rays.

The use of high voltage X-Rays is principally concerned in the treatment of malignancy. That X-Rays will devitalize cancer cells is admitted and the problem confronting us is, what is the necessary amount of radiation to permanently inhibit the growth of the various maligant cells and how can we deliver same without endangering the normal cells? Two questions are here asked covering the most important phase of X-Ray Therapy and the answer to neither seems likely in the near future.

The X-Ray cancer dose varies according to the type of neoplasm and is undertermined clinically. Wood proposes as a unit the amount of X-Rays necessary to inhibit a certain rat tumor of constant and tested biological qualities but its use seems impracticable. Seitz and Wintz speak of cancer and other doses in terms of erythema doses and as this is the limit beyond which we should not go, it seems at this stage the most practical unit for clinical use. From clinical experimentation they claim the carcinoma cell is permanently inhibited by 110 per cent of an amount of X-Rays which, if applied to the skin, will produce a deep tanning in two to three weeks, about 80 per cent of this amount inhibits the sarcoma cell and 30 per cent produces amenorrhea.

In our practice we have tried to work out a practical scheme of dealing with cancer cases beneath the surface and have convinced ourselves that 110 per cent to 115 per cent of the amount of X-Rays which will produce a heavy tanning of the skin will, if delivered to the carcinoma cell within a period of a few days, produce for the time being a disappearance of the local disease in many cases.

Immediately on the installation of our high voltage apparatus we set about to determine, using a given setting, the time required to produce a safe erythema. Knowing by past experience the factors used when operating with 140 K. V. necessary to produce this effect, by the use of the iontoquantimeter we calculated the requried time and boldly administered the dose which we estimated at 9 ma. hours using 200 K. V. at 20 inch distance and a half m. m. copper filter. We soon found this produced rather too heavy a re-action and after a little experimenting we demonstrated to our satisfaction that 7 1-2 ma. hours was the required dose and if applied to a surface epithelioma without infiltration and depth, will effect a cure. This is the dose we are using at this time.

Our next problem was then how to deliver this dose to various depths plus 10 or 15 per cent without over-dosing the skin. Having determined what per cent of the surface dose reached various depths and having selected to use two, three or four ports of entry, it was easy to calculate what fraction of a full dose to apply to each port in order to get the required amount to a three or four inch depth. This technique will be illustrated later by slides.

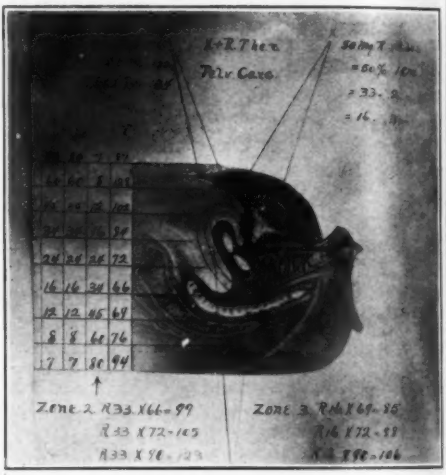
In the use of H. V. X-Rays accuracy in posturing the patient or parts to be irradiated is more necessary and should be followed with more care than in the use of lower voltages. In fact it is absolutely essential that the parts to be irradiated should be brought directly in the part of the central beam and as small ports of entry used as is compatible with the aim of saturating a given area. The operation of an X-Ray tube with H. V. is comparable with the use of a high powered rifle, if aimed correctly and ac-

curately, the object in mind may be given a death blow without danger to surrounding objects but if fired without proper thought and care, may not only miss the objective but result in disaster to other objects in the vicinity. For this reason I have chosen an installation which is shown in illustration that enables me to place my tube at any angle or shift desired and at the same time allows the patient to be postured in any pose desirable. The practice of treating patients through a hole in the wall, floor or ceiling, I believe is incompatible with accuracy and will ever be so until tubes are made which will enable us to get sufficient depth doses in one or not more than two ports of entry despite the opinions and practice of some of our authorities and good friends to the contrary.

In the treatment of deep malignancy the area of known and suspicioned malignancy must receive a saturation dose of equal intensity as near as possible throughout—one small area of disease if under- dosed vitiates the whole result while an overdose at other parts only lowers the resistance of tissue needed in the defense. With a tube and table installation where angulation of tube and patient can be easily arranged, it is easy to saturate an area, say of the pelvis, with X-Rays, of any desired size, with any desired dose. In the majority of cases with present voltages and present depth doses attainable this can only be accomplished by the use of several ports of entry, four will easily cover the average requirements.

Realizing the difficulty of accomplishing this end by the use of a small number of ports has led some to the practice of using radium and X-Rays conjointly, which I believe to be illogical, unscientific and from a physical and biologic standpoint, grossly wrong. The intensity of radium radiation decreases so rapidly as we measure out from the point of contact that within a few c. m. its effect is negligible while with X-Rays the variation is scarcely noticeable. Using the radium measurements of intensity given by Schmid's with the X-ray measurements made in our laboratory, we find it impossible to juggle the figures into any combination after many hours effort which will show a uniform radiation in any way approaching the uniformity gotten by X-Rays alone. In practice our results have been equally disappointing. Where we have used the two in combination we have had cystitis, proetitis, colitis and seen our patients grow worse day by day. The cuts illustrating Schmitz' technique, if examined carefully, will show the same wide variation of dosage, far over at some points and way under at others, as the chart which we show you.

In all cases of malignancy definitely limited to a small area or to an organ or tissue, the removal or destruction of which will not hazard the life of the patient or probably disseminate the disease; radium or surgery, it would appear, should claim first consideration. In others where the disease is more vide spread or when from anatomy of the parts we may expect early scattering, X-Radiation is the choice. An unbaised opinion or group of opinions will in many instances place the case in a class calling for the judicious use of all agents, X-Rays, radium, surgery and the guiding advice of a good medical consultant.



Showing Lack of Uniform Radiation when using Radium and X-Ray Combined

A patient with cancer has a systemic disease regardless of whether the cancer cell is localized or not and the physiologic defences and repair will as often determine the result as will the re-

moval or destruction of the cancer focus.

These are facts that must be realized by all of us when we review our failures and seek an explanation for our occasional successes.

In 1917 a distress signal was sounded by the people of Europe when a conscience less and deadly foe was striking at their very vitals and threatening destruction of civilizations structure. That wonderful mind, leader and inspirer of men, arose to the occasion and by forcing a unity of action paved the way for the checking and final destruction of the menace which hovered over the whole world.

Today an SOS signal is in the air, a deadly enemy threatens every man, woman and child and they are looking to the medical profession for help as Europe appealed to America. Shall we or will we fail them? We need no leader to point us the way. Unity of action we know is the only solution. We are all members of a great profession and it should matter not to which particular branch the individual case should go. For the accomplishing of the greatest good to the greatest number let us pool and coordinate our efforts, the Radio Therapist, the clinician and the surgeon.

DISCUSSION

Dr. Lester J. Williams (Baton Rouge): The greatest aid to the physician are the instruments of precision, and I believe the X-Ray can be numbered among the instruments of precision. With the advent of the high voltage X-Ray machine, such as Dr. Barrow has so ably discussed, we have a precision of X-Ray dosage that has not been seen in the past. Malignancy is the greatest menace at this time that we have to deal with, and our real hope of salvation I think lies in the high voltage apparatus and deep X-Ray therapy.

I was in hopes Doctor Barrow would give us some of the statistics of his work along this line, and I trust in closing he will see fit to mention some of his clinical cases.

Dr. Adolph Henriques (New Orleans): I cannot say that I agree altogether with Doctor Barrow in several of the statements he made. It is true that Seitz and Johnson are of the opinion that it is a question of the quantity of X-Ray that gets into the tissue, but a great many other authorities are of the opinion that the quality of the radiation plays a great part in the treatment of malignancy. A great many authorities are of the opinion, and I heartily concur with them, that the best results to be obtained in the treatment of malignancy by radio therapeutic measures consist of combining radium with the high voltage X-Ray therapy. I think the results to be obtained will be better by a careful study of the dosage, and by combining these two agencies. It is a fact that in a number of cases we can cause the disappearance of malignant growth by means of radio therapy. Ewing has called attention to the fact that the reaction of the tissues to these agents is specific, that tissue defects are called forth by these agents which are produced by no other means. Unquestionably the use of a radioactive substance, or radio therapy and the high voltage X-Ray will cause an increasing number of palliations, and an increased percentage of total disappearance of the growth. But I do not think that radio activity and high voltage therapy have solved the problem of cancer. Until we find something which will take care of the metastases we have not reached the solution of the problem. But unquestionably it is a step in the right direction, although there are so many unknown factors in cancer that we have not reached the correct solution. I think the local growth should be treated, but also the matter of hygiene and living considered as well as the local growth.

Dr. S. C. Barrow (closing): I can only say to Doctor Williams that I have no statistics. We are trying to cure cancer and other things and are succeeding to the extent of clearing up some cases for the time being that make us extremely enthusiastic, but we have no cures of cancer that we know of. If we have, possibly we will know it after a lapse of years. In the meantime we are trying to use a measure that is clearing them up more rapidly and apparently more effectively than anything we have used before. We are using radium constantly and regularly, in proper doses, in every case of incipient carcinoma of the cervix, but we so seldom get them when they are incipient that we cannot depend upon radium to reach out and get the malignant cells that have passed beyond the cervical tissue. We did use radium and X-Ray together, but it gave us some distressing results, so we came to the conclusion that we were overdoing the treatment in certain fields and underdoing it in others, so we now use radium only where we know the disease is still limited to the cervix. These are rare cases. But we cannot use these two agents together successfully at the same time.

REPORT OF ONE HUNDRED ANESTHETICS ADMINISTERED WITH ETHYLENE GAS.*

BY E. E. ALLGEYER, M.D.
NEW ORLEANS.

In our search for the best anesthetic in all respects, there has come to us Ethylene, the employment of which is undoubtedly in its infancy, and I have come tonight to point out certain facts concerning this drug.

To Dr. A. B. Luckhart, of Chicago, we must give the credit for discovering from a practical point of view its anes-

*Read Before the Orleans Parish Medical Society, November 12, 1923.

thetic property. In the American Medical Association Journal, we are told that Hermann and Davy and Muller some forty years ago employed Ethylene and Acetylene in anesthesia, and the older books upon this subject mention this compound. Dr. Luckhart contends that the latter was a combination of Ethylene with Chlorine. All the literature seems to be so undecided that I deem it unnecessary to go further into it.

Ethylene is a gas of ordinary temperature, having the formula C^2H^4. Its odor as we know it commercially is that of molasses and garlic, and when inhaled in concentrated form, produces an irritating cough, leaving a metallic taste. It becomes liquid only under great pressure. That it is inflammable, can be readily seen when one knows that it is a part of our ordinary illuminating gas, but for practical purposes, unless exposed to a flame, this is nearly negligible. It forms an explosive mixture when combined with four parts to 96 parts of air. It is manufactured by the dehydration of grain of Ethyl Alcohol with Phosphoric Acid, and placed commercially in the large tanks with which we are familiar.

Before going into this subject, a foreword seems timely and necessary. We do not want the impression to be made that this work is to praise this new agent, for if it is to be not practical, we want to condemn it and to do it right now.

Taking the cases as I have seen them in my work, they can be tabulated as follows: Laparotomies, which consist of nearly every variety of work, appendectomies predominating, 36; other major operations which include hernias, breast amputations, amputations of limbs, thyroidectomies, etc., 35; minor operations, those usually done in the treatment room, 29; in other words, a fair assortment of all sorts of surgical work. In this series, records were kept as to time of induction; length of operation; degree of relaxation; whether Ether was required or not; the time for return to consciousness after anesthesia was discontinued; whether the amount of hemorrhage was increased, and the amount of nausea and vomiting following anesthesia.

Induction was in every instance, rapid, as we note it in Nitrous Oxide anesthesia, the operation being begun usually within ten minutes. In quite a number, we were obliged to have the operator wait for twelve minutes; this, of course, is no improvement on the other methods.

To consider shock and many other points bearing on this important symptom, the length of time of the operation should be stated. The usual range was from a few minutes to, in one case, three hours and ten minutes. Eighteen of our cases were of over one hour's duration. The other average longer procedures were from 30 minutes to one hour.

The much flaunted relaxation so widely spread the whole country over, I am afraid can not be corroborated in all instances. In eighty of the cases, the relaxation was very satisfactory and all work could be done deliberately. In the remaining twenty, eight of these were slightly difficult, but by increasing the dose, surgical anesthesia was obtained and maintained. In ten cases, Ether was necessary to produce thorough relaxation, the amount given ranging from one-half an ounce to two and one-half ounces. These patients gave us considerable trouble and strained without the addition of the more powerful relaxant. It is interesting to note that six of these were upper abdominal operations involving a gall bladder region, one respected by all of us and quite a test as to the capability of an anesthetic drug to abolish reflexes. In two patients, it was necessary to push anesthesia to a near dangerous overdose. These were for unprepared patients in both instances and should warn us that the danger dose must be anticipated at times.

The general opinion that comes to us is that quite deep anesthesia is obtained with a usually low percentage of Ethylene (85-80) and a high percentage of Oxygen (15-20 Oxygen). Unfortunately, my observations have not proved this to be a fact. The records show that the average was 86-92 per cent Ethylene, the remainder Oxygen (14-8 Oxygen). This, I believe, is of great interest to all because any method which necessitates the exclusion of all air should recall the vital necessity of Oxygen, and the more we can allow, the more safety to our patient. We are all well ac-

quainted with the cyanotic patient when Nitrous Oxide is used and we know that not often were we able to do work with this anesthetic and a percentage of Oxygen greater than 5 per cent on up rarely to 10 per cent. Since practice shows us that we are infrequently required to reduce this percentage to lower than 8 per cent for continued lengths of time, which my records show, it is a striking advantage gained over the older method. That prolonged anoxemia is a danger, we must appreciate and by all means foster all research which will eliminate this condition.

Having considered the two most advertised points in this form of anesthesia, we must consider the effect on the circulation as we see in on the operating table. As a foreword, actual blood pressures were not taken, but the pulse rate was charted every five miutes and any change apparent to the finger in the volume of the pulse was noted. The condition known as shock was not considered unless the rate was increased to above 120 and the volume perceptibly decreased. In only nine cases was this rate exceeded, nor did I consider these patients shocked. Two of these were operations on the thyroid with a bordering failure of circulation when started. Three were cases of acute appendicitis with considerable toxemia when the operation was undertaken. Reviewing these latter records, I find that the remainder show only a mild degree of circulatory failure, if any. In no case was it necessary to infuse the patient in order to support the circulation. The striking observation of the pulse is its slowness which I have no doubt is caused by direct action of Ethylene. What the physiological reason for this is, has as yet been undetermined; still it is an interesting fact in following up the cases after anesthesia, to find that the degree of depression to the circulatory system is minimum as compared to our results with previous methods. In other words, patients who have been operated under this drug to produce insensibility were found less drained of their vitality, a necessary requisite for a speedy convalescence.

To show a few of the effects when prolonged administration has been undergone, I can cite the long cases:

1. One of 2 hours and 45 minutes duration which shows a chart with the pulse at the start, 76, rising in 45 minutes to 110, then falling back rapidly to 90 and remaining so until its termination. The pulse was full and regular throughout.

2. Another case of 3 hours and 10 minutes; a pulse of 110, remaining so for 1 hour and 35 minutes, then increasing to 134 for 15 minutes, returning to 100 until the end of the operation.

3. The above is quite the usual picture in the average long procedure and one which I am sure teaches us a great deal.

In all but one record, did we find that consciousness did not return almost immediately upon discontinuing the anesthesia, even when Ether was used as a relaxant. This, to my mind, will show that if the latter drug must be employed, only a small amount is usually required.

One of the most disagreeable symptoms that patients complain of following operation is that of nausea and vomiting. Has this new agent improved this condition? I shall leave this matter to your own judgment when you have seen our results. The records used show what the patient did the first eight or ten hours following, after which lapse of time all of the drug employed had been eleminated. The results are as follows:

1. In nine cases only do we see the patient made considerably sick by being nauseated and vomiting several times.

2. Thirteen others were bothered with considerable nausea, having only one or no emesis.

3. Five others suffered with a negligible nausea, the remainder being free of any such complications.

It must be stated that in some, the patient was permitted to return home practically at once and such a follow up was impossible. This only happened eight or ten times. In my opinion, the records will show a decided advantage over the former methods and we hope in the future such good results will be maintained.

So far I have presented the praiseworthy facts concerning the employment of Ethylene. Now, let us look into its disadvantages. The bad odor of this compound is one most complained of by

both patient and attending staff and which should certainly be eliminated if possible.

A decided disadvantage from many points of view is the increased amount of bleeding at the site of operation. This is explained as a vasomotor relaxation. In the face of exsanguination or congestion and also in certain individuals with a low coagulation time, this would be a decided contraindication for its use.

Physiologic experimentation has only been begun and a great deal of work will be necessary before conclusions can be made as to its effects upon the vital systems of the human organism. Still we can state some clinical observations of what we think will be the results. The respiration is usually slow throughout, some remaining within the normal limit of 18-24 and some considerably slower than that. This is due most probably to a depressing action upon the respiratory center. I believe that experimentation will uphold this contention. Air passages are not irritated under Ethylene and administration with acute bronchitis pre-existing, did not in any way increase the severity of the inflammation.

The heart rate is slow, some coming down to as low as 50, in a few instances, and many times I have seen the pulse beat between 60-70, in spite of considerable operative manipulation. Whether this is a stimulation of the centers slowing the heart or a depression of the accelerators has not as yet been determined. Simultaneously, the blood pressure shows a fall, again a vasomotor depression and relaxation along with the slowing of the heart. In a few cases where continuous blood pressure was taken, the charts show from 10-30 mms mercury drop in the systolic at first and gradually rising towards its original level. These records though are only too few for a study of this fact. It seems safe to say that in the presence of myocardial degeneration, Ethylene is safer than Nitrous Oxide on account of the lessened anoxemia required to produce anesthesia. The kidneys, a part of the cardiorenal system seem to be unaffected clinically, for in the face of extensive disease of this organ, it was administered and less harm was done than is usually seen when surgical intervention is necessary in such cases.

In summarizing my statistics, I can state that I consider that:

1. Ethylene gas, on the one hand, does produce a deeper anesthesia with accompanying relaxation than does Nitrous Oxide and that it does so without requiring that the necessary amount of Oxygen be nearly as limited.

2. On the other hand it has not been able to produce this relaxation in quite as great a percentage of abdominal work as does Ether, but when this is required, only small amounts will give us the desired results as were shown when we consider the eight of the nine cases so treated were awake immediately, not having any of the effects of the latter drug.

3. Less shock is certainly the prevailing picture presenting itself and one giving incentive to desire to prove this quality without doubt.

4. The unprepared patient whom we must subsequently treat in the office or in the treatment room of the hospital can be given a much safer anesthetic. This class of case so frequently required a dangerous over-dose when Nitrous Oxide was employed that I personally have welcomed any other products which would eliminate such a condition.

5. Hemorrhage is increased, a great possibility for a contraindication.

6. All facts considered so far, it is a safer gas anesthetic.

DISCUSSION

Dr. O. C. Cassegrain: I had occasion, about two weeks ago, to use ethylene for the first time. Dr. Allgeyer gave it for me. It was a simple case a DcCe application of Radium but the thing that struck me most was the rapidity with which the patient came out of the anesthesia. About 2 minutes I should say. She was conversing rationally as she left the operating room.

Dr. W. B. Baker: In regard to the slowing of the pulse. Dr. Jackson, a pharmacologist, has done considerable experimental work with ethylene, and believes that the heart is retarded by stimulation of the vagus centers, but that it would be impossible to produce death by this action. He believes that ethylene produces death in the same way as does nitrous oxide by suffocation.

Our experience with nausea and vomiting following ethylene anesthesia has been about the same as Dr. Allgeyer's, but there is one other little point I wish to bring out—patients frequently complained of headache following nitrous oxide, presumably due to anoxemia.

This very rarely occurs following ehtylene.

We have in our work a considerable number of blood pressure records, and I have to disagree with Dr. Allgeyer on that point. Ours show a uniform rise of about ten or twenty mm., in the early stages of the anesthetic, followed usually by a return to normal in a short time, which is maintained usually throughout the remainder of the operation.

One of the main disadvantages I have experienced is the lack of uniform results. Many cases are very easy, but I have had several which I was entirely unable to handle without resorting to ether.

Dr. Herb of Chicago has done 900 or 1000 cases up to the present time. At first she used about 80 pe rcent ethylene and 20 per cent oxygen. At that time she procured her ethylene from Dr. Luckhart, who I understand had it made in the university laboratories. When she began getting it from the present commercial source, she found it necessary to increase the percentage of ethylene to 85 or 90,and cut down the oxygen correspondingly, presumably because of impurities in the gas. We hope that when we can get pure ethylene there will not be so much odor, and that anesthesia can be maintained with a lower percentage of the gas, making it possible to give more oxygen.

Up to the present time, there has been only one death from ethylene reported, and it was from a series of twenty cases. I do not know the details of this case, and can only give it to you for what it is worth. Dr. Herb claims almost 1000 with no trouble of any kind, and several hundred other cases have been done in different places with no fatalities.

I wish to compliment Dr. Allgeyer on the case records. It is a difficult task to chart all the details he has given and administer an anesthetic at the same time.

Dr. E. E. Allgeyer: There were many facts I did not bring out on account of small amount of time. I have noticed the absence of headaches Dr. Baker mentioned. With nitrous oxide patients often get headaches from low percentages of oxygen required.

As far as the blood pressure is concerned, I stated my records were insufficient to make a statement as I deemed it more necessary to watch the patient than to take the blood pressure every five minutes. This is difficult unless there is someone helping.

I noticed that most of the cases in which we have had unstable results have been usually in laboratories and nearly all were in the upper abdomen, where deep anesthesia must be obtained before there is relaxation of the parts concerned.

We are not getting the absolutely pure product. The Ohio Manufacturing Co., have just written to me saying that they are making every effort to bring it up to sandard.

Dr. Cassegrain's case (D. & C application of radium) shows the usual results that we have seen. Those patients are quite nauseated and vomit a great deal where anesthetized by nitrous oxide. I have administered ethylene three times for such applications around the pelvis and they have not suffered hardly any nausea which seems a great improvement.

Contra-indications: I stated that increase of hemorrhage was likely to occur therefore bleeders may have dangerous hemorrhage as a result. I have noticed in the obstetrical work under ethylene (in version and application of forceps) that the uterus was so relaxed that bleeding was quite excessive I had to turn to nitrous oxide. This did not happen in more than 2 cases.

In the presence of medical conditions such as cardio renal disease, diabetes, mild inflammation of the lungs the gas was administered with no aggravation of the pathology present. It seems that ethylene does not do any harm when such are present and we hope that more work of this character will uphold our present opinion.

PROCEEDINGS OF ORLEANS PARISH MEDICAL SOCIETY

THURSDAY, SEPTEMBER 20, 1923

SPECIAL MEETING HELD IN HONOR OF SIR THOMAS OLIVER

Introductory Address By Dr. Rudolph Matas

Mr. President, ladies and gentlemen: I wish it were in my power to speak in adequate terms of the life work of the distinguished guest of the evening, but fortunately for me the achievements of Sir Thomas Oliver are so universally recognized that they speak for him and for his labors far more eloquently than any praise that could be showered upon him by the most gifted orator.

To extol his merits before a medical audience would be very much like "carrying coals" to his home in Newcastle—a superfluous and futile task. It is, however, only right and proper, since Sir Thomas has traveled so far from his busy home on the Tyne, to honor us with this visit, that we should show him as medical men and citizens of an enlightened community, that we share in the sentiments of admiration and respect which are felt for him everywhere for the life of faithful service that he has given to the betterment of the industrial classes of his country and of the world.

In no way has the humanizing influences of medicine been better displayed than in the special field of work in which Sir Thomas Oliver has been engaged.

In fact, in the cultivation of that branch of hygiene and preventive medicine which is dedicated to the study of the relations of the dangerous trades and occupations to health and efficiency, the medical profession has proved the most potent agency for the protection and uplift of the appressed and suffering masses of the underworld of toil.

In the study of the physical ills which affect the health and lives of the industrial classes the medical profession has had to deal at first hand, with the fundamental causes of poverty and distress. In this way hygiene and sanitary science have inevitably merged the interests of medicine with those of a common humanity, of sociology and political economy; and in this way, again, Medicine has been not only a helpmate but a guide to the Church and to the State.

The dangers and diseases inherent to certain occupations and trades were known in the earliest civilizations and as far back as Hippocrates and Galen. But it was not until the invention of the steam engine and the rapid advance of the mechanical and chemical sciences and arts, in the latter part of the eighteenth century, that the tremendous rise in the manufacturing industries and trades brought before the eye of the world the evils and dangers that beset the swarming multitudes who flocked to the great centers of industry and commerce.

The effect of this rapid concentration of an indigent and improvident population in a crowded and unhealthy environment, and of the indiscriminate employment of men, women and children without sanitary supervision or governmental control, soon became apparent. The working people realized that steam, machinery, electricity and speed had not improved their lot in life and spoke of their conditions as one of slavery and of their factories and sweatshops as "slaughter houses."

The conditions that prevailed in the British industrial centers up to the middle of the last century, 1850 and later,

were a mere sample of the general misery that prevailed among the working classes the world over. Infantile and juvenile mortality was enormous, and those who attained youth became prematurely old and decrepit before manhood. In one manufacturing city, Manchester, in 1863, the average age of the working classes was only 22 years as compared with the 46 years of the higher classes. Even much later the general death rate for the whole of England of 22 per 1,000 was raised to 36 per 1000 per annum in the industrial districts. The squalor, misery and the toll of death exacted of the underworld of toil, as the price of industrial and manufacturing progress, has furnished an inexhaustable theme for the poets, novelists, artists and historians of all countries. These evils need only be mentioned to make us realize in all their vividness the violent social reactions and revolutionary upheavals that they have brought forth in the more oppressed countries of Europe and which are now the subject of anxious concern of the entire civilized world.

England, the most active and productive manufacturing nation, was primarily concerned in the alleviation of these growing evils and the need of protecting her industrial population was recognized not only in the interests of pure humanity, but as a matter of social, political and economic necessity. Laws directed to the hygienic and moral protection of the wage earners by inspection and supervision of the factories through justices of the peace and by the clergy were enacted as early as 1802. These were soon found inadequate and other laws of broader scope were added in the course of years. But it was not until 1891 that the supervision and sanitary control of the factories and trades was placed in the hands of the sanitary authorities and local medical officers of health. In 1897 the workmen's compensation act was passed by parliament which, as subsequently amended and expanded in 1906, marks one of the greatest epochs in the history of protective labor legislation. In the form of insurance against accident and occupational disease, and in other ways, it has been adopted in principle, at least, by most of the great nations of the world.

The constantly growing agitation and discussion of the living and social conditions of the industrial classes has led to administrative and legislative reforms which have improved the status of labor all over the world. The trend and tendency of legislation in England, in the continent of Europe, and especially in our own country, has been to limit the hours of labor, to raise the age limit of child labor from 5 to 15 and even 16 years in some states; to exclude women and children from certain industries, especially dangerous to their age and sex; to provide hours of rest and recreation; to provide for adequate ventilation, fire protection, light, heat and safety devices against machinery and other industrial accidents; to protect the eye, ear, nose and skin of the operatives in certain industries in which these organs are especially endangered; to allay dangerous dust in mining, textile factories and other dust-creating occupations; to regulate the manufacture of certain especially toxic products such as lead, phosphorous, mercury and other noxious substances; to provide in some cases for the periodical medical examinations of all employees, and, again, to provide compensation and indemnity for the disabilities and deaths caused by accident or diseases contracted in the line of duty.

In the endeavor to attained these and other beneficent ends the labor leaders have found inspiration and their most effective weapons in the vast storehouse of medical knowledge,—a knowledge which has accumulated in modern times through the painstaking researches and laborious investigations of the master workers of our profession throughout the world. Therefore, of all the agencies that are working for the physical welfare and social uplift of the laboring classes, the physician stands foremost as the guadian of their most vital interests.

It is as an exponent of this splendid function that we welcome and honor our distinguished guest of the evening. In a vigorous medical career bridged over by a span of nearly half a century of unremitting activity, he has devoted his best energies to the investigation of the diseases that are peculiar to the industrial classes and has enriched the litera-

tune of the profession by original contributions on the causes, prevention and treatment of these diseases. Through his studies on metallic and mineral poisonings as developed in the white lead and lucifer match factories, and potteries, and by his researches on the methods of allaying the injurious effects of the dust of mines and textile factories, he has obtained practical results which have minimized the occupational dangers of these industries and thereby saved the lives of thousands of workers engaged in these hitherto forbidding occupations. As an expert in occupational diseases and industrial hygiene he has served as counsellor to his government on several national and international commissions which have directed the measures upon which protective labor legislation has been based.

His earlier essays on heredity, and his quite recent discussion "on the factors which make for efficiency and social uplifting of industry," and "on some social and medical gains of industrial legislation," which appeared last year, show him to be a philosopher and a statesman, as well as a doctor. He has been a pleader all his life for the humanization of industry and for the uplifting influence of work, and through it, raising the standard of mankind and the dignity of labor. On the other hand, he has tempered his enthusiasm with sound judgment in standing for the co-operation of the employer with the employed so that "the program of industrial hygiene shall all be settled in conformity with reason and experience and not by mere sentiment."

In conclusion, Sir Thomas Oliver's writings all clearly show that in spite of his great flights into other neighboring domains, he has remained first and foremost a physician. It is with the practiced eye of a medical man, familiar by long and close contact with the physiognomy and behavior of disease, and as a clinician keenly trained by long hours of observation at the bedside, that he has seen the light which has brought relief and comfort to his suffering fellows. And it is as a doctor of medicine and as a master in his profession that we now hail Sir Thomas Oliver as one of the stalwart knights of our order.

Sir Thomas Oliver, M. D., (Glascow) F. R. S. C., (London) then addressed the Society, his subject being: "Some Unrealized Possibilities of Preventive Medicine."*

Permit me to thank you for the warmth of the reception you have given me. I feel it is indeed a great honor and I deem it a great privilege to address this audience. It is my intention to say a few words about preventive medicine from an industrial point of view. I am pleased to see that in New Orleans, as in America generally, there has been a marked decline in the number of cases of tuberculosis; as the decline commenced before the discovery of the tubercle bacillus it is clearly not due to this circumstance. Material prosperity by increasing the resistance of the individual may have played a part but it matters little so long as the result is secured. Without further preface I pass at once to the subject of preventive medicine from the industrial point of view.

I have always held that a man's occupation should never be a source of illness to him, but be his means of making a livelihood and, as far as possible, a source of pleasure to him. This, however, has not always been the case. In the early part of last century, children of tender years, five or six, were employed in the coal mines in Great Britain. The foremen often found the children asleep, and thrashed them. Children too were employed in factories and had to work 10 or 12 hours a day. All this has changed. There is now no child labor in England under 16 years of age. Occasionally the law is broken and a child of 12 years of age may be found employed. Boys in England leave school at the age of 14 and are not taken on as apprentices in factories until the age of 16. What just to do with these lads during these two years is a difficulty. Formerly many of them worked for small wages as errand and telegraph boys. They helped to raise the family income, but the work led

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nowhere. We are making efforts to establish training schools in vocational work to which these boys can be sent.

In the early part of last century children were taken from the poor houses and hired out to factory owners. These were known as "apprentice" children. After the battle of Waterloo in 1815, England suffered then, as now, from unemployment; one-fifth of the people at that period had become impoverished; there was much privation and as a consequence parents sent their children into the factories. The prentice children leased out by the guardians of the poor were sent out in groups and were housed together in barracks. I have been in one of these houses in the neighborhood of Bradford in Yorkshire and I was struck with the thickness of the walls of the building, practically a prison for children whose delicate hands I feel sure could not wrench the iron bars if they tried to. All of this, however, is a thing of the past.

Talking of boy labor, I remember in my own father's house a boy, not more than eight or nine years of age, coming with the sweep and being sent up the chimney to sweep it. Young as I was, it made me shudder. The practice continued until after the middle of the last cetnury when a boy was suffocated in a chimney. The practice was then forbidden by law.

It is a strange circumstance that with all our unhappy experience in England of child labor the United States of America did not apply it. No nation, it would appear, seems to benefit by the experience of another.

My name has been associated with lead poisoning in the industries—the story of the campaign against it in Great Britain is simply this. Dr. Matas told you I began life as a doctor among cotton spinners. It was amongst these factory workers that I got into touch with the laboring classes and came to take an interest in them. After I was appointed physician to the Royal Victoria Infirmary of Newcastle-on-Tyne, I was struck with the large number of admissions of men and women (particularly the latter) suffering from lead poisoning. Hardly a few weeks would pass without there appearing in the daily newspapers the account of the death of a young female from lead poisoning. Newcastle-on-Tyne is a center of the white lead industry and after watching the repetiton of these sad events I made up my mind that at a meeting of the British Association of Science I would draw attention to the fact and see whether something could not be done. Lead poisoning was also taken by me as the subject of lectures at the Royal College of Physicians in London. It was after the delivery of these lectures that Mr. Asquith, then Home Secretary, appointed a committee to inquire into the subject of lead poisoning and invited me to serve upon it. I did so. At this particular time I had known of ruddy, healthy looking young women going into white lead factories and dying six to eight weeks afterwards. As a result of the deliberations of the home office committee we advised the abolition of female labor in the dangerous processes of white lead manufacture. This was done. The employers attacked me and told me that this would ruin their trade. Women's organizations also asked me what business I had to interfere with women's labor. It was almost impossible for women, if they were pregnant, to go on working in the lead factories without miscarrying. Or, if they went to term, the infant usually died a day or two after birth, in convulsions. I have known of married white lead workers who had followed their occupation during two, three and four pregnancies and their infants dying before or shortly after birth, yet when the women subsequently took up out-of-door work and became pregnant they gave birth to healthy children and these lived. It was because of the appalling loss of infant life that I pressed for the elimination of women from the dangerous processes of white lead manufacture.

In consequence of the reduction in the number of female lead workers and with improved factory regulations industrial lead poisoning in Newcastle-upon-Tyne and elsewhere has considerably disappeared.

I was invited to go to Hungary as there had been several deaths from lead poisoning. When I got there the Minister of Labor graciously received me and placed a government office at my dis-

posal. In Hungary the manufacture of pottery in many places is a home industry. A potter's house is also his workroom. In the kitchen the ware is made and dipped in the lead glaze; here too the family lives. The children are raised in an atmosphere laden with lead dust. We examined the clothes of the children and we found lead in these, also in the ordinary household utensils. The whole family was thus breathing and swallowing lead dust. It therefore was not an unusual thing to find that the potter's wife or children had died from plumbism or that some one of the family was paralyzed. When I reached Hodmezovaserly, a large village, I was received by the master potter and invited to visit one of the potter's houses. Here a sad sight met my gaze: women, men and children paralyzed, one or two of them blind. The people pleaded with me and asked if nothing could be done to help them. That evening we formed ourselves into a small committee, a Hungarian doctor assisting me. It was my wish to report direct to the Hungarian government and the recommendation I made was simply this: that the dipping and drying of the glazed ware should be carried on away from the homes of the potters and be done in a communal house in each village so that a potter's family would be no longer exposed to lead dust. Three years after that I went back to Hungary to see the result. When I got to one of the villages the doctor met me; he had prepared a list of cases of lead poisoning in the village for the last 20 years, and there were, 80, 77, 75, 84, etc., until the date of the establishment of the communal dipping house, when the number of cases fell to 14 and in the following years to eight and three. In addition, the doctor said that he had received a telegram from the Secretary of State requesting him to see whether he could find in the village any cases of lead poisoning in infants, but the doctor, after a careful search, could not find one. This circumstance shows that much can be done to alleviate and prevent industrial lead poisoning.

To one other occupational disease I would like to draw your attention and that is phosphorus poisoning in the manufacture of lucifer matches. Several cases had occurred in Great Britain. It is a painful malady. The jaw bones become inflamed and the affected portion of bone dies; the pus secreted, if aspired into the lungs, may cause broncho-pneumonia. When visiting match works in France and Belgium I found among the workers not only cases of necrosis of the jaw bones but a peculiar fragility of long bones, without undue strain the long bones of the body would snap. In Hungary, I saw several cases of phosphorus necrosis, some of which were fatal. I found in a village in Prussian Silesia, in a match factory, one woman working without her lower jaw; it had been removed by a surgeon; all she had was the upper jaw with a small dental plate resting on the floor of the mouth. There was considerable scarring of the neck caused by the operation and yet notwithstanding all this woman had suffered she had returned to the match factory. It seemed to me that the only thing to do was to try to find a harmless substitute for white phosphorus. I went to France and found that the French government was using sesquisulphide of phosphorus. I experimented upon animals and I found that the sesquisulphide was non-poisonous. My colleague, Sir Edward Thorpe, and I, therefore, recommended to the home office the desirability of doing away with white phosphorus and this was done. In factories where they had previously cases of phosphorus necrosis, these now ceased, under the new conditions. This is an illustration of what can be done to transform a harmful into a harmless occupation; we did not abolish an industry but substituted a non-poisonous for a poisonous substance.

We are all, as medical men, more or less interested in the conditions of labor for the working classes. Since I came to the states I have had the opportunity of discussing labor problems with Mr. Secretary Davis in Washington, also with Mr. Samuel Gompers as regards trade unionism. Mr. Gompers told me that when he began his life's career there was no limit to the length of time men could work. They could work well on into the night, but now all this has been stopped; 44 to 48 hours a week is today the average for nearly all trades,

with the result, as Mr. Gompers says, that the longevity of the working classes has distinctly lengthened. To this circumstance higher wages and shorter hours have also contributed. We have no desire to underestimate the good results which trade unionism has secured; all we say is this: that as medical men we will co-operate and lend our aid to any form of activity which will promote better industrial conditions and improve the health of the working classes.

New Orleans Medical
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EDUCATION OR LEGISLATION?

It will not be long before the smoke of political combat will have cleared away and the new governor of Louisiana will be sworn in; at the same time, a new legislature will begin to function (or disfunction, as time will tell). Many matters of vital interest to us, as citizens, as medical men and as guardians of the public health, will come up for consideration. While we have an excellent committee on "Public Policy and Legislation," these gentlemen cannot do much good unless they have the wholehearted support of each and every one of us. It is now a little early; but, in order that we may do better than heretofore, let each member of the L. S. M. S. make up his mind to put his shoulder to the wheel, discuss these matters with his legislators—elect, early and often, and, later, when the session opens, go to Baton Rouge, if need be, and, by personal interview, impress upon these senators and representatives the need of certain things and the absurdity of others.

In this connection, we are reproducing an article by Dr. E. C. Ellett, Memphis, Tenn., originally published in the A. M. A. Bulletin for December, 1923, entitled "Whose Responsibility?"

"A few days ago, I was listening to a man reciting his unfortunate experience with a doctor, by whom he seemed, according to his statement, to have been badly treated, owing to incompetence on the part of the physician. The patient was a prominent influential and intelligent man, to whom one would naturally listen with respect. He was answered in this manner: 'Mr. T., no one knows better than the doctors that such an experience is possible, and doubtless happens, and efforts have been made for many years to have laws passed whose object is to eliminate such possibilities. Every line in our laws looking to that end has been put there by the physicians over the strenuous opposition of the people, such as you.' He was fair minded enough to see that this was true and to admit it. Now it is strictly true that every line of the law that attempts to regulate the practice of medicine was enacted through the efforts of the regular medical profession. It is equally true that no law has been passed, or proposed for passage, by the profession that in any way sought to work to the advantage of the regular profession. We have only answered for certain educational requirements, possessing which a man could practice medicine as he worshipped God, 'according to the dictates of his own conscience.'

"We read in a recent number of the *Bulletin* (November, 1923), that a society has been formed in the interest of scientific medicine, with laymen at its head. ("The friends of Medical Progress"). It is high time that such a society should spring into being, and that

the doctors be relieved of the physical and financial burden of legislative load, which is intended to work to the benefit of the people and not to the benefit of the medical profession. For the thirty odd years that I have practiced medicine, there has been a continual watch and fight and worry necessary, when the state legislature was in session, to protect the existing laws from harmful onslaughts, and occasionally to add a little to the structure. At the last session, an attempt was made to emasculate the law of one state by doing away with the preliminary requirements. This was done because the son of one of the legislators was unable to enter a medical school on account of lacking of educational attainments.

"The question presents itself. Why should the medical profession take upon itself, or be called upon to fight this battle of altruism? Why not quit, and let all the quacks and skeptics and short horses and faddists that the people want enter the field of healing? A dignified statement of the aims and achievements of the regular profession should be placed before the people, but why summon the doctors to go before legislative committees, and contribute to funds to enact proper laws! To the best of our knowledge, our opinion is not wanted, at least is not sought. We come out in favor of what we think is right, and almost invariably we are accused of self-seeking; the measures we advocate are looked on as measures for our profit and protection. As a matter of fact, we are the least concerned. We can protect ourselves and families from the incompetent and the unprepared, and this sort of competition probably never hurts us.

We do vast amounts of public work for nothing, in hospitals, dispensaries, state and county institutions, etc., work whose money value is very large, and this service is accepted, but when it comes to asking a hearing on matters in regard to which our experience and position should entitle us to be listened to with respect, we find that our opinions are neither wanted nor heeded. One is almost tempted to advocate a 'strike,' and to demand that if we treat the state's and city's poor gratuitously, and teach in state institutions for nothing we be given a respectful hearing, and that our advice be heeded when it comes to matters of public health and measures looking to its protection from the ignorant and unprepared."

"It is the fashion to combat the appeals of the medical profession on these lines with a recital of cures in cases in which regular medical treatment failed. The treatment of diseases is but a small part of the question. Epidemiology, prevention of disease, sanitation and other large and important questions which are essentially medical are things that can only be dealt with by trained men. With these matters, the faddist, the cults and the thousand and one healing systems do not deal. They are the only concerned with treating the individual sick person and for a fee."

PROCEEDINGS OF TOURO INFIRMARY STAFF

Clinical Meeting December, 1923.

(Dr. Feingold, Presiding)

Dr. Heninger: Tonight I wish to discuss the type of irregularity known as "Heart Block". There are two cases which I wish to present; the etiology of the two is different. I regret that I cannot show either one of these cases for certain reasons. The first case (I do not know much about the clinical history) was referred by Dr. Lyons to the Department of Electrocardiography for cardiograms. It was interesting that this lady is known to have had a peculiar heart disease over a period of 30 years and that it was diagnosed as "heart block" by Dr. McKenzie over 15 years ago. She had an infectious disease—I believe Diphtheria. Cardiographic tracings taken in this hospital showed the sino-auricular—that is, there is an altered transmission of the impulse between the pace maker known as the sino-auricular node and the auricles. Normally, the impulse is received at the sino-auricular node, passes down the auricle in a wavelike motion, just like the ripples resulting from throwing pebbles in a pond of water, and they collect at the auriculo-ventricular bundle, and transmitted down the "bundle of His" traveling down to the right and left branches where it further divides into numerous small branches, known as aborizations which run into the muscle substance of the ventricles. Thus you see any conditions pathologic or otherwise which would intercede or delay this impulse anywhere along this conductive pathway would have a tendency to cause a heart block. Necessarily, there are different types of heart block—may be a low grade or a complete block which would give you the Adam-Stokes syndrome. A sympathetic disturbance would probably cause a heart block of a very low grade. In this specific case, the symptoms being of paroxysmal character, it was thought best to determine whether this was a sympathetic block or a true pathological condition. The method used to determine this is to do away with the vague stimulation by the administration of atropine. This patient was given 1-150 of atropine hypodermically, the exact amount of atropine received by the patient not being known on account of the poor syringe. Cardiograms were immediately taken, 2 minutes, 4 minutes and 6 minutes after the injection with the result that the heart block was not done away with in any of these sets of tracings. Therefore, we came to the conclusion that this was a typical case of pathologic sinu-auricular block, due to diphtheretic infection, progressing very slowly.

The second case of heart block is an exceptional one. This is a case referred by Dr. Matas, of a traumatic arterio-venous aneurism of the right femural, resulting from a pistol shot wound eleven months ago. The case presented tumor of the right groin, a palpable thrill, and enormous enlargement at that extremity with all the findings of an arterio-venous aneurism. Aside from this most interesting feature, our attention was called to the fact that on deep pressure over the aneurism, there was a marked slowing of the pulse. This case was brought to the Department of Electrocadiography for a complete study of the cardiovascular system. Cardiographs were taken before and immediately after pressure. Instantaneously, after pressure there was a slowing of the heart rate to the extent of thirty beats per minute. The slowing progressed until there was a definite delayed conduction of the impulse from the auricle to the ventricle thus establishing a low grade heart block. On removing pressure, this delayed conduction was done away with. Up to about ten days ago, the cause of the heart block or this marked slowing of the pulse, was thought to be due to a sudden overfilling of the ventricles after restoring the circulation to its normal pathway. Recent work has shown that there is no increase or very little increase in the pressure in the veins but that this is the result of the stimulation of the vagus. It occurred to us that atropine would

do away with this block or slowing of the heart beat in the event that it was due to stimulation of the vagus. Again the syringe failed, but enough atropine was obtained so that the slowing and the conduction time of the impulse was not altered as much as it was previous to the injection of atropine. Further work will be done upon this case and will be the basis for a communication at some future date. On passing, I wish to mention that these are the first electrocardiographic tracings taken on an arteriovenous aneurism in the United States as far as the literature shows:

Dr. Heninger: Case 3. This case is a very interesting one, although it is not a heart block but it represents the first case in this institution of which I know that died following the administration of quinidine sulphate. The patient was a white man 78 years of age, entered inside service Touro Infirmary October 22, 1923, died November 13, 1923. This patient is shown thru the courtesy of Dr. Lemann.

The findings according to the record were that the man was rather elderly looking, marked edema of the lungs and ankles, evtreme yspnoea, cyanosis. No general adenopathy, conjunctive suffused, no teeth, lips purple. The heart: Left border extends to the left axillary line 6 interspace. Right Border: 4 cm. from the mid. sternal line in the third interspace. There is no visible or palpable apex impulse. The heart sounds are distant. The radial pulse was irregular, easily compressible, rate 120. The abdomen showed free fluid, liver and spleen not palpable.

On October 27th, electrocardiogram was taken and showed auricular fibrillation. Digitalis was instituted. Up to this time, 2 ozs. of Tr. Digitalis had been administered by mouth. Oct. 30th, cardiogram was again taken—the heart rate was estimated at about 60. Digitalis was discontinued, although the heart at this time was still fibrillating. The spacing between the beats was so marked that the progress sheet shows a diagnosis of premature contractions. Nov. 3rd cardiograph shows fibrillations still present. Auscultation revealed what was thought to be premature contraction. Digitalis was instituted again. On Nov. 5th notes from the progress sheet show pulse 50; another cardiogram taken at this time shows a marked coupling of beats. Digitalis discontinued. Nov. 12th it was considered that possibly quinidine sulphate would stop the fibrillation, and so was administered in doses of 2 grains three times daily. A total of 14 grains was given. On the morning of the 13th I decided to take another cardiogram to ascertain the results of this therapeusis. On going to the ward to see the patient that morning, he was complaining of most excruciating pain in the abdomen. He had been given an enema without relief. He complained about his treatment in Touro and I thought he was malingering so that he would not be taken to the cardiograph laboratory. At about 10 o'clock that morning cardiograms were taken without any disturbance whatever and patient was returned to the ward within a period of 10 minutes. By noon the pain did not seem to abate, patient was given morphine 1-4 grain. In spite of this the pain still persisted. Patient's abdomen was examined—no evidence of rigidity was found, abdomen was soft, flat, no distension. Pain seemed to be somewhat localized in the epigastrium. The cardiogram was immediately developed and had changed completely from the previous one. It now showed in addition to auricular fibrillation, numerous premature contractions which probably arose in the right ventricle. From this and the excruciating pain in the abdomen, the diagnosis of coronary thrombosis of the left coronary artery was made. In fact, the death certificate was signed this way before autopsy. At midnight, patient became pulseless and died at 3 A. M.

At 9 o'clock next morning, Nov. 14th autopsy was performed by Dr. Bowden, later viewed by Dr. Duval, Dr. Lanford being out of the city. The heart was exposed, coronary arteries were opened and found patent and in perfect condition. The leaflets of the mitral valve were markedly sclerosed and the diagnosis of "thrombosis of the left coronary" was apparently wrong. After the heart was removed from the pericardial sac and studied carefully, there was an area about the size of a dollar found in the left ventricle which resembled

either an old gumma that was healed or an area of the muscle which had degenerated following some previous infarct many years ago. This area was one of fibrosis which completely replaced the muscle tissue of the heart. The remaining muscle fibres were in fairly good condition in comparison. Such an area of fibrosis would clinically represent a condition which would follow a coronary thrombosis and possibly was the cause of these premature contractions arising in the right ventricle. Thus the cardiogram in this case told the truth. The cause of the man's pain was no doubt hemorrhagic infarct of the spleen which was caused by the administration of quinidine, the same conditions having been reported throughout the United States on various occasions and it is one of the frequent causes of death in these cases.

Dr. Lyons: Discussion Dr. Heninger's case. I would like to say just a word about the first case because I have had her under observation for about fifteen years. The irregularity began immediately after a bad case of Diphtheria 30 years ago. Every doctor who listened to her heart noted it was extremely irregular. I have watched it for fifteen years. She has gone through one pregnancy 16 years ago without difficulty. She required considerably more physical care than a normal individual but with moderate limitation of physical exertion she is apparently in good health. The iterpretation of sphymographic tracings before we had the electrocardiograms was not clear. There was evidence of some heart block and McKenzie wrote a rather noncommittal letter to that effect. These are the first electrocardiograms that have been made. Sino-auricular block according to the most modern authorities that I have seen in the last year state that you have a total cardiac standstill. The impulse is blocked in the sino-auricular node itself, or if not blocked in the node between it and the auricles. There is, therefore, no auricular contraction or ventricular response.

If you look at the electrocardiographic curve, you simply have an absence of everything. No cardiac movement at all.

This tracing does show P-waves, with markedly increased conduction time. I personally do not quite understand the exact mechanism of this irregularity. I hoped Dr. Lemann would get Dr. Dr. White of Boston to give him an interpretation on the curves when he was in Boston. The atropine test was not satisfactory for the reason that Dr. Heninger stated. It was in a darkened room and only 1-150 of a grain and grobably 1-3 of this was lost. The interpretation of the curve to my mind is not all a simple matter.

Dr. Lemann: I wish to answer the question as to the cause of embolism after quinidine. It is thought to be due to the fact that quinidine stops fibrillation, and that when the auricle begins its orderly contractions, a piece of the mural thrombus previously existing in the auricle is swept off into the blood stream. That is the reason they are afraid of quinidine. I heard from Dr. Levine of Boston, who can speak authoritatively on quinidine, that his experience was apparently the same as ours was here in this case. In old hearts quinidine is dangerous.

Dr. Eshleman: I wanted to know whether the autopsy had shown any definite point from which the embolus had caused death.

Dr. Heninger: When the peritoneum was opened there was a quantity of bloody fluid in the peritoneal cavity. Dr. Duval said it was due to a gas bacillus following death. The real cause of death he thinks was cardiorenal death brought on suddenly by possibly an embolus arising from the leaflets of the mitral valve being thrown off by the peculiar action of quinidine and finally lodging in the spleen.

Dr. Lemann: It is only fair to say that this patient was moribund when he came in. He was 72 years old, gasping for breath, and with general anasarca. He was rendered comfortable by adequate doses of digitalis. However, these full doses of digitalis did not bring about a cessation of the fibrillation, as evidenced by the electrocardiograph, even when clinically he had had enough digitalis. I must say that previously I have been a doubter as to the danger of quinidine. Quinidine is a salt of quinine, quite analogous to the ordinary quinine salt we use in malaria, and I

have always asked myself why quinidine could be so dangerous when we used quinine so generally in the South. If quinidine and quinine are so dangerous, why have we not seen cases of death due to quinine? Many doses of quinine must have been given to patients with heart trouble who also had malaria, or what was thought to be malaria. I shall proceed with quinidine in the future with considerably more respect.

A case of Poliomyelitis with Normal Spinal Fluid—Ludo Von Meysenbug, M. D., A. B., D. P. boy, aged 2 1-4 years. neg. birth and feeding history—none of the children's diseases.

Spent summer in Evanston, Ill., returning to New Orleans on September 1st. On September 15th, Sat. boy was vaccinated at his home, running about apparently perfectly normal. That night had fever, mother called up to ask if it might be due to vaccination. Was told probably not. Two days later—saw patient again and he had fever up to 103 5-10, was drowsy and listless but no special complaints. Was kept in bed most of time, but allowed to get up to go to stool, etc. Four days after onset patient was very listless, whining, refused food, and resented being disturbed, wanted to be left alone. He seemed to have pain in his leg, but it was difficult to understand which leg and he moved both legs when necessary. Temperature was normal for a day or two, then shot up again to 104. The physical examination two days after the probable onset (the night of the vaccination) showed only a typical grippal throat. Rafleps were all normal. On the fourth day, the vaccination began to take and resulted in a very severe take, the whole upper arm swelling and being very red and tender. Temperature at this time was ascribed to the vaccination and aside from the listlessness and somewhat vague evidence of pain in one or the other leg and the red throat, the boy's main trouble seemed to center about the vaccination. Seven days after after the first rise in temperature, he complained of a great deal of pain, and it was noticed that he refused to move, even in his bed. The reflexes at this time showed an absent K. J. on the left, sluggish but present on the right. There was also no plantar response on the left and there seemed to be foot drop and loss of tone of muscles of the left leg.

A lumbar puncture was done the next day, 8 days after onset of the disease and probably not more than 2 days after onset of paralysis. The fluid was not under tension, dropping out very slowly. It was perfectly clear. The cell count showed 5 cells per cmm. and globulin test was negative. Routine Wassermann was also negative. This spinal fluid finding threw considerable doubt on the diagnosis of poliomyelitis. The only other condition that could have given a similar clinical picture is peripheral neuritis, where pain is the prominent symptom, as it was in this case. In looking up peripheral neuritis in the text books, I found the statement that it sometimes follows an oridinary acute naso-pharyngitis, such as this boy had at the onset. As you can see from the chart, there was no fever while he was in the hospital and the pain in his leg had subsided. There was flaccid paralysis of his left leg, absent k. j. and plantar reflex on that side.

Two days after leaving the hospital he could wriggle his toes, and then motion of the upper leg returned. Toe drop remained also loss of k. j. and plantar response. The interesting and unusual feature of this case is the normal spinal fluid. In considering the pathology of poliomyelitis we know that the earliest change is a hyperemia of the pia and blood vessels passing into the cord and an accumulation of lymphocytes and polymorphs, about them. It is to this that we ascribe the spinal fluid changes.

But in a study of 2000 polio spinal fluids, Neal and Abramson found increased polys in only 37 instances and then not always in the first few days. Of 500 fluids carefully studied by these authors, they found only 23 in which the cytology was normal, but they always found increase in globulin. Of 30 cases showing flaccid paralysis, there were 11 giving no pheocytosis.

Dr. F. W. Peabody, whose name will always be thought of in connection with poliomyelitis, wrote me that a normal spinal fluid is extremely unusual in the pre-paralytic stage, but that a normal cell count occurs in a small majority of instances after the onset of

paralysis. In his experience, a complete absence of globulin in the first week after the onset of paralysis is very unusual.

I was considerably reluctant to make a diagnosis of poliomyelitis with that spinal fluid finding, but clinically there could be no doubt of it. The temperature reaction was masked by the vaccination but there appears to have been a dromedary type of curve, such as Peabody describes as occurring in some instances of the disease.

I have asked Dr. O'Ferrall, who saw this boy with me about one week after lumbar puncture, to give you his opinion of the case and also to outline early treatment.

NEWS AND COMMENT

At a meeting of the Southern Surgical Association held at White Sulphur Springs, W. Va., on December 11-13, the surgeons of New Orleans were well represented by a large delegation and by a number of valuable contributions to the program and to the discussions. Drs. F. W. Parham, R. Matas, C. J. Miller, H. B. Gessner, S. M. D. Clark, J. A. Danna, I. Cohn and U. Maes (re-elected treasurer) were present.

Dr. Cohn read on "Splenectomy as a treatment for Purpura Hemorrhagica," Dr. Gessner on "Report of cases of the Matas operation for aneurism with a statistical review," Dr. Matas "on the secondary effects of Arterio-venous fistulae on the heart and general circulation," Dr. Miller on "The Cure of Incontinence of Urine in Women."

Tulane graduates outside of New Orleans also contributed notable papers. Dr. DuBose of Selma, Ala., on "Cholecystduodenostomy and Cholecystgastrostomy," Dr. Dunbar Newell, of Chattanooga, Tenn., on "Bone Sarcoma," Dr. James N. Mason, of Birmingham, Ala., on "The Influence of hemorrhage on the mortality of gunshot wounds and other injuries of the abdomen."

The retiring president, Dr. James F. Mitchell, entertained the association with an interesting and beautifully illustrated lantern-slide travalogue of a naturalists's expedition to the "Galapagos" islands in the Pacific, headed by Mr. Beebe, the well known explorer and naturalist, Dr. Mitchell participating as surgeon of the expedition.

Dr. LeGrand Guerry, of Columbia, S. C., was elected president, and Drs. Roysster and Maes re-elected secretary and treasurer, respectively.

Dr. S. M. D. Clark was awarded a prize, a silver cup, in a golf contest.

The next meeting will be held in December, 1924, at Charleston, S. C.

On Thursday, December 14, Dr. Matas held a surgical clinic at the Johns Hopkins Hospital, in which the Tests for the Efficiency of the Collateral Circulation as a Preliminary to the Occlusion of the Large Surgical Arteries, were especially discussed and illustrated. Dr. Matas was the guest of honor at a luncheon given by Drs. J. M. Finney, Thayer and members of Dr. Finney's staff.

On Sunday, December 16, Dr. Matas, Dr. Finney and Dr. Welch delivered addresses at the Memorial Services held at the Johns Hopkins University in honor of the late Dr. William S. Halsted, Professor of Surgery and Surgeon in chief of the John Hopkins Hospital. The services were attended by a very representative gathering of Dr. Halsted's former associates, pupils and friends, who had assembled from many parts of the country to pay a tribute of respect and affection for their chief, the eminent founder of the Surgical School of Johns Hopkins University. President Goodnow presided over the meeting.

Award of the Sofie A. Nordhoff-Jung Cancer Research Prize.

Dr. Johannes Fibiger, professor ordinarius in pathological anatomy at the University of Copenhagen, has demonstrated, following repeated experimentation, that parasites play an important role in the formation of certain types of tumors in the proventriculi of rats.

Furthermore he has succeeded in effecting papillomata and undoubted carcinoma through the parasite nematode. Where others have failed after years of persistent researches, he first met with success in artificially inducing malignant tumors through external irritations and so thrown wide new avenue to future findings. Though the earlier results of Fibiger's work date back a number of years, he unremittingly labored towards an interpretation of the significance of parasitic irritants in malignant tumor formation, likewise of mechanical and chemical irritants. Fibiger and his associates have contributed generously to the literature of cancer production through the feeding to rats of oats and the application of tar to their tissues. In this

way they have confirmed the successful work of Stahr and Yamagiva.

In a word, Fibiger's advances towards the solution of the problem of the causitive irritants productive of cancer are at the same time most comprehensive and most remarkable.

The Commission on the award consisted of Professors Borst, Doederlein, v. Romberg and Sauerbruch, all of the University of Munich.

The Webster Parish Medical Society met Thursday, November 22, at 2 p. m. in the Scout Theater at Minden for their regular fall meeting. Scientific papers were read by Drs. Butler of Springhill, and Crutsinger, Baker and Martin of Minden. The papers were enjoyed and the subjects discussed by all the members present.

Dr. L. Longino made a very instructive talk on the need of a Hospital for Minden and Webster Parish. After a general discussion a resolution endorsing the hospital was unanimously passed. Dr. Paul Crutsinger and Dr. C. M. Baker were elected members of a committee to aid the movement for a hospital.

The following officers were elected to serve during the year 1924: Dr. W. McDade, of Minden, president; Dr. J. D. Kilgore, of Minden, vice president; Dr. C. M. Baker, of Minden, secretary and treasurer. Dr. B. A. Norman of Sibley was elected delegate to the State Convention, with Dr. J. D. Kilgore as alternate.

At the January meeting of Shreveport Medical Society, the scientific program was furnished by the Charity Hospital staff. It was clinico-pathalogical and clinical and dealt, especially, with tuberculous meningitis; some of the cases were diagnosed ante-mortem, some post-mortem, only, closing with the presentation of two living cases, one of which will doubtless recover, prognosis in the other being doubtful.

Delegates to the State Society meeting in Opelousas were named, viz: Drs. J. E. Knighton, S. C. Barrow, W. H. Adams, E. L. Sanderson, T. P. Lloyd. Alternates: A. P. Crain, M. S. Picard, J. M. Bodenheimer, J. J. Frater, I. B. Rougon. Inasmuch as there were 122 members on the roll of the society for 1923, it is expected that over 100 will have paid dues before April, in order to entitle Caddo Parish to five delegates.

Drs. L. H. Pirkle and T. E. Williams have purchased a site in the western part of Shreveport, known as Queensborough, and have announced their intention of erecting thereon a modern hospital building.

Dr. C. W. Phillips, formerly of Haynesville, La., has recently moved to Shreveport.

Monthly Bulletin of the Orleans Parish Medical Society.

The society begins the year with a total membership of 476. There are many physicians who are eligible, and every effort should be made to bring them into our organization.

The President announces the appointment of Dr. Sam Hobson as chairman of the Scientific Essays Committee. Members desirous of reading papers during the coming year are requested to communicate with him at an early date, thereby facilitating the preparation of the program for the coming year.

Delinquents for the fourth quarter are required to pay their dues before February 15th.

Annual dues for the state society and first quarter dues for the Orleans Parish Medical Society are payable January 1st. Prompt remittance will facilitate the work in the office and assist in reducing certain expenses.

The annual meeting of the society was held Monday, January 14th, 1924. Dr. H. W. Kostmayer, the retiring President presented his report, and Dr. S. Chaille Jamison read the President's address. In addition the reports of officers and various chairmen were read, and evidently the society has progressed and had a most successful year. After the meeting refreshments were served. A total attendance at this meeting was over 175.

The joint meeting of the old and new Boards of Directors was held Monday,

January 7th, and plans for the coming year were discussed.

Applications for membership pending: Dr. Larry J. Dupuy, Dr. W. N. Floyd and Dr. Elliott Kiblinger.

Delinquents number eight.

February Program.

February 4th, Board meeting; February 11th, scientific meeting; February 26th, scientific meeting.

Treasurer's Report for December, 1923.

Total receipts	$489.96
Total expenditures	479.85
Resources.	
Domicile fund, Liberty bonds, par value	$30,000.00
Library endowment fund, bonds, par value	3,500.00
Medical relief fund, savings account	96.23
	$33,596.23

Librarian's Report for December.

The work of the year has carried the organization of the library well on to completion. Four thousand two hundred books have been added to the records. Of these 133 were received from the New Orleans Medical and Surgical Journal; 131 were added by purchase, 115 by binding and 167 by gift. This brings the total of books as shown in the completed records to 9,600 volumes. There remain approximately 1,000 volumes more. All of these are from the old Charity Hospital collection, the dates ranging from 1750 to 1865. Another three months should completely finish the cataloguing to date.

A pamphlet and reprint collection has been started which we expect to make of unusual value for quick reference work. We have already over 300 on file and shall add to the collection as rapidly as possible.

A noteworthy addition to the library during the past year is a complete set of Guy's Hospital Reports, which we imported directly.

As authorized by the Library Committee, the evening hours of opening were discontinued on May 31st. In September, Tulane University asked permission to resume the evening hours at their own expense for the use of the students of the Medical School. This permission was granted by the society and the library has been open from 7 to 10 six evenings each week since October; Mr. Leonard Wilson being in charge.

The reference work continued through the summer months to a gratifying extent, the average daily attendance for the year being from 8 to 10. Twenty-five subject bibliographies have been prepared and placed on file for further use.

The library has been the recipient of gifts from the following persons: Dr. P. B. McCutchon, Dr. J. A. Lanford, Dr. H. L. Johnson, Dr. A. E. Fossier, Mr. Fung y Figueras and the Eye, Ear, Nose and Throat Hospital.

Monthly Bulletin of the Shreveport Medical Society, January, 1924.

January 9th, program by Charity Hospital staff. February 5th, program by North Louisiana staff. March 4th, program by Highland Sanitarium staff. April 1st, program by Schumpert Sanitarium staff.

Willis P. Butler, M. D., President.

I wish to express to the members of the Shreveport Medical Society, my appreciation of the honor and confidence displayed in electing me president of the society for the year 1924.

In making committee appointments I have selected those whom I feel sure will gladly serve and do all possible in support of the officers. The Program Committee is already busy, and we can look forward to interesting meetings.

I expect to serve to the best of my ability and ask that each member give the officers the fullest co-operation because this is necessary if we are to have a successful and profitable year.

Finally, I ask that you attend the meetings, bring others with you, join in the discussions and help keep the attendance record as near 100 per cent as possible.

Officers for 1924:

President—Dr. Willis P. Butler.

First Vice-President—Dr. I. Henry Smith.

Second Vice-President—Dr. E. L. Sanderson.

Secretary—Dr. Robert T. Lucas.

Treasurer—Dr. Lewis Cass Spencer.

Committees for 1924 will be announced in the next Bulletin.

The regular monthly meeting of the Shreveport Medical Society was called to order by President Pirkle at 8 p. m. Thirty-three members were present. Minutes of the last meeting were read and corrected.

Treasurer's report. Dr. Spencer reported that there are eight members who have not paid 1923 dues. There is $7.89 in the bank and a bill for $15 outstanding against the society.

Secretary's report. For the year ending with the November meeting there were present at the twelve meetings a total of 348. Average attendance per meeting 29. Present enrollment 123. Deaths two, Dr. S. Y. Alexander and Dr. W. H. Billingsley. New members seven, Drs. Best, Caldwell, Gowon, Gilmer, Heard, Simonton and Sandridge. Transfers one, Dr. R. F. Harrell. Resignations one, Dr. O. B. Hicks. Number who have not attended any meeting during the year, 37.

Election of officers.

For President Dr. Willis P. Butler was nominated by Dr. Heath. The nomination was seconded by Dr. Ragen. Dr. Butler elected by acclamation.

For First Vice-President Dr. I. Henry Smith was nominated by Dr. Hendrick. The nomination was seconded by Dr. Ruthledge. Dr. Smith elected by acclamation.

For Second Vice-President Dr. E. L. Sanderson was nominated by Dr. Herold. The nomination was seconded by Dr. Heath. Dr. Sanderson elected by acclamation.

For Secretary Dr. R. T. Lucas was nominated by Dr. Blackman. The nomination was seconded. Dr. Lucas elected by acclamation.

For Treasurer Dr. L. C. Spencer was nominated by Dr. Hendricks. The nomination was seconded. Dr. Spencer elected by acclamation.

There being no objections the January meeting was decided on for the election of delegates to the Louisiana State Medical Society.

There was no unfinished business.

Dr. Boyce announced that the City Library has taken over the Medical Society's library.

Dr. Sanderson started a healthy general discussion as to how to increase interest in the society and increase its usefulness to its members and to the community.

Dr. Herold announced the meeting of the Tri-State Medical Society at Texarkana on the 5th and 6th.

On motion the society adjourned.

R. T. Lucas,
Secretary.

Fifth District Medical Society.

On December 11th at the St. Francis Sanitarium clinic building, was held one of the most delightful and satisfactory meetings of the Fifth District Medical Society ever held. About 60 members attended. A program of unusual interest was given by men over the district. Dr. C. P. Gray gave the president's address. Luncheon was served by the St. Francis Sanitarium and several talks were made, including a splendid, short, spicy speech by Dr. Gaines, of Tallulah. Dr. Fisher, of Choudrant, was elected President; Dr. Perot, of Monroe, was elected Secretary, and Dr. C. P. Gray, of Monroe, was elected delegate to represent the district society. All the meetings of the Fifth District Medical Society are held in Monroe, because of the central location and railroad facilities.

Ouachita Parish Medical Society.

Ouachita Parish Medical Society has a large membership, the largest in its history. This society holds an annual banquet, usually in December at the time of election of officers. The banquet held this year at the Hotel Monroe was attended by practically the full membership. Officers for next year are: Dr. Hirsch, President; Dr. Peters, Secretary; Dr. Bennett, delegate to state society, and Dr. George Wright, alternate delegate. These banquets are very delightful occasions for the men, and the spirit of fraternalism is always boosted on these occasions.

The staff of the St. Francis Sanitarium holds monthly meetings in the clinical building of that institution.

Short but splendid programs are carried out. Case reports and discussions appear to be more generally enjoyed than papers. These meetings are unusually well attended.

During the past year the Ouachita Flying Squadron, composed of about ten men of Monroe, have visited in a body the Morehouse Society on two occasions, the Caldwell Society for one meeting, and the La Salle Society for one meeting. This group of men in visiting the smaller socities carry with them practically a full program and place it at the disposal of the smaller society. Each of the societies so far visited have treated the Flying Squadron to a splendid banquet on each occasion. Lincoln and Jackson, joint society, will hold a meeting early in the year in some convenient place and the same group of men will attend in a body. The amount of good that is accomplished by these visits we believe, is considerable. The small society maintains its membership; it is stimulated to make a substantial showing and is held together in a way not obtained by any other influence like this one.

St. Tammany Parish Medical Society.

St. Tammany Parish Medical Society held its regular monthly and annual business meeting Thursday night of last week at the Southern Hotel, with the following members in attendance: Dr. J. K. Griffith, President; Dr. W. R. Singleton, Secretary-Treasurer; Drs. G. R. Pennington, J. F. Polk, F. F. Young, J. F. Buquoi, C. F. Farmer, H. D. Bulloch, R. B. Paine, W. L. Stevenson and A. G. Maylie.

Dr. Stevenson illustrated the Schick test for diphtheria, on living subjects, which proved very instructive and unusually interesting to the members, many of whom saw the operation for the first time.

This being a business meeting scientific papers and discussions were dispensed with and the following officers were elected for the ensuing year: Dr. J. K. Griffith, President; Dr. G. R. Pennington, Vice-President; Dr. W. R. Singleton, Secretary-Treasurer; all three re-elected. Delegate to the Louisiana State Medical Society, Dr. F. F. Young; alternate, Dr. A. G. Maylie.

The American Congress on Internal Medicine.

The eighth annual clinical session of the American Congress on Internal Medicine will be held in the amphitheatres, wards and laboratories of the various institutions concerned with medical teaching, at St. Louis, Mo., beginning Monday, February 18th, 1924.

Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session.

Twenty-nine thousand Ford workers have defective vision, according to a report made by the Ford management to the Eye Eight Conservation Council of America, which, following investigation of industrial waste of the Hoover committee of the Federated American Engineering Societies, is conducting a survey of the eyesight conditions among the nation's industries.

The Department of Commerce is publishing each week the census mortality reports from the largest cities of the United States.

There are given for each city the total number of deaths reported (still births excluded), the death rate, the number of deaths under one year of age ,and the infant mortality rate based on deaths under one year for the week and estimated births for the previous calendar year.

The Department of Commerce announces lower death rates of mothers from childbirth or puerperal causes in 1922 than in any year since 1916.

National Committee for Mental Hygiene.

Dr. Frankwood E. Williams was re-elected Medical Director of the National Committee for Mental Hygiene at the annual meeting of the Board of Directors, held in New York City, on December 28. The following were elected members of the Executive Committee: Dr. Williams L. Russell, Medical Direc-

tor, Bloomingdale Hospital, White Plains, New York; Dr. Walter E. Fernald, Superintendent, Massachusetts School for the Feebleminded, Waverly; Dr. Stephen P. Duggan, Director, Institute of International Education, New Fork City; Dr. William A. White, Superintendent, St. Elizabeths Hospital, Washington, D. C.; Dr. Charles P. Emerson, Dean of the Medical School, University of Indiana, Indianapolis; Dr. C. Floyd Haviland, Chairman, State Hospital Commission, Albany, New York; Dr. Arthur H. Ruggles, Superintendent, Butler Hospital, Providence, Rhode Island, and Mr. Matthew C. Fleming, attorney, New York City. Dr. William H. Welch, President of the National Committee for Mental Hygiene, presided.

Louisiana Nurses Board of Examiners.

The semi-annual examination of the Louisiana Nurses Board of Examiners was held in New Orleans and Shreveport, December 10th and 11th. Seventy-nine applicants qualified as registered nurses.

The Louisiana Nurses Board of Examiners is composed of the following doctors: John T. Crebbin, President; Joseph S. Hebert, Secretary-Treasurer; George S. Brown, New Orelans; Fred J. Frater, Shreveport; Robert W. Faulk, Monroe.

Removal: Dr. A. J. Newman, from Montpelier, Louisiana, to Hammond, Louisiana.

Died: Callan—On Friday, December 28, 1923, at 5 o'clock p. m., Dr. John Callan.

Dabney—On Friday, December 28, 1923, at 11 o'clock a. m., Dr. Thomas Smith Dabney, aged 73 years, a native of Mississippi, husband of the late Ida Ewing and father of Thomas Ewing Dabney.

The Secretary of the state society announces plans for the Opelousas convention are actively underway, and everything points to a record breaking attendance.

Monthly Radio Health Talks sponsored by the Orleans Parish Medical Society is given regularly every third Friday in the month, over the Tulane University radio station WAAC. Hour 8:30 p. m. sharp. Dr. Homer Dupuy will be the next speaker.

The societies in the state have just completed one of their most successful years. Help us learn of your activities by sending to the editor of this column news, personal and of a medical nature.

St. Rita's Infirmary in Opelousas has just been completed.

STATISTICAL DATA FOR THE MONTH OF NOVEMBER, 1923, OBTAINED FROM THE RECORDS OF THE CITY BOARD OF HEALTH.

Births.	
Male, white	357
Male, colored	139
Total	496
Female, white	282
Female, colored	163
Total	445
By physicians	521
By midwives	420

Deaths	White	Colored
Diphtheria	4	2
Typhoid	0	0
Malaria	0	1
Scarlet Fever	0	0
Whooping Cough	0	1
Influenza	6	3
Measles	1	0
C. S. Meningitis	2	1
Tuberculosis	22	23
Cancer	30	13
Apoplexy	37	20
Endocarditis and Myocarditis	8	10
Angina Pectoris	3	0
Other Circulatory Diseases	76	46
Broncho Pneumonia	20	13
Lobar Pneumonia	13	21
Other Respiratory Diseases	5	3
Diarrhoea and Enteritis	9	4
Appendicitis	3	3
Other Digestive	11	5
Acute Nephritis	0	5
Chronic Nephritis	18	10
All other Genito-Urinary Diseases	3	2
Puerperal State	5	5
Malformations	3	9
External Causes	33	20

Death Rate Per 1,000 Per Annum for the Month—Non-residents Excluded.

White	14.86	12.96
Colored	27.71	26.06
Total	18.35	16.08

Deaths from premature births, violence, etc., are not excluded.

Dr. T. I. St. Martin of Houma, La., has been appointed chairman of the Section on Rdiology for the approaching meeting of the Louisiana State Medical Society.

BOOK REVIEWS

Tonsillectomy, By Greenfield Sluder M. D., Pub. by C. V. Mosby Co. St. Louis. 1923.

In this very excellent monograph the collateral problems of embryology, physiology, and pathology, are given a thorough review. This feature alone gives the work a special value. The chapter on Adenoidectomy by direct vision is timely, for the usual technic applied i nthis operation is hardly the last word in the surgery of the postnasal space. Even if one does not accept the Sluder method for tonsillectomy as the best, this volume, written with the collaboration of Arthur Proetz and I. D. Kelly, Jr., is replete with valuable information relating to the ever interesting tonsil question.

Homer Dupuy.

Rhus Dermatitis (Poison Ivy) Its Pathology and Chemotherapy. By James B. McNair. The University of Chicago Press. Chicago, Illinois, 1923.

James B. McNair's Book, Rhus Dermatitis, proved to be a book of greater depth and greater importance than one would have expected from reading the title only and I do not thing it is fair to him that the work be reviewed from the standpoint of Dermatology only; the volume should be of great interest to the Chemist and Botanist as well. I am sure all Dermatologists would have welcomed a final decision that Lobinol was the undoubted cause of this Dermatitis Venenata and also that a specific antidote had been found but, with it all, one must admit that McNair's volume is intensely interesting and should be read by all doctors, those practising in the rural districts particularly, as well as those specially interested in diseases of the skin. The report of many case histories in detail will prove, even to those of us who have seen a fair amount of Rhus Poison, interesting and considerably enlightening.

H. E. Menage.

Diseases of the Skin, Fifth Edition Rev. By Richard L. Sutton, M. D., LL. D. C. V. Mosby Co., St. Louis, Mo. 1923.

The American Dermatologists have written many excellent books on diseases of the skin; the Fifth Edition of Diseases of the Skin by Sutton is certainly an addition to them. The index is unusually complete for a volume of that size, and with its numerous references, the general practitioner as well as the medical student would make no mistake in reading it. The illustrations are numerous and in many instances excellent; to read the book is a pleasure on account of the clear large type and excellent paper the publishers deemed wise to use.

H. E. Menage.

The Examination of Patients. By Nellis B. Foster, M. D., Associate Professor of Medicine, Cornell University. W. B. Saunders and Company, 1923.

As a system of examination, the text is rather differently written by keeping the reader constantly in mind of the fact that a live patient is being examined. Each abnormality that may be noted has its variations listed and the practical significance of the variations is indicated. The book is completely up-to-date, the laboratory findings and interpretations are well thought out and an excellent colored plate brings out the characteristic eye grounds. The actual methods of eliciting the various physical findings and abnormal reflexes are not given in enough detail for undergraduate use, but is still very desirable for advanced workers.

F. M. Johns.

Outlines of Medical Zoology. By Robert W. Hegner, William W. Cort and Frances M. Root, Department of Medical Zoology, Johns Hopkins University. The Macmillan Company, 1923.

This little volume is the outgrowth of the small bulletin issued by the same authors, entitled "Diagnosis of Protozoa and Worms Parasitic in Man", which was published in 1921 and which has gained wide circulation. The new book is along the same lines and contains considerably more material, especially in the treatment of the protozoan infections. Two colored plates depicting the various malaria parasites are exceptionally good. The volume does not cover even in outline quite enough general zoology to supplant any of the more complete books; and as a text-book for medical students I think it is seriously handicapped by not including the life cycle of the various worms parasitic in man. It is still essentially a volume devoted to diagnosis. The addition of the chapter on Arthropods makes the volume of considerably more importance than the earlier bulletin.

F. M. Johns.

Orthopedic Surgery. By Royal Whitman. M. D., M. R. C. S., F .A. C. S., 7th. Edition, Lea & Febiger Philadelphia and New York, 1923.

The earlier editions of this book have served for many years as a text book on Orthopedic Surgery. In this seventh edition new illustrations have been added and certain important chapters have been strengthened and lengthened. The wide experience and thorough knowledge of the author have enabled him to produce a book that should be in every medical library. To the general practitioner the work will be valuable for reference, and to the medical student the greatest aid in understanding this specialty; the Orthopedic Surgeon will find many practical points and helpful suggestions, no matter what his own experience may be, and will profit through its reading. Certain proceedures that have proved valuable in the experience of the author have been elaborated, and the whole subject has been covered in a masterly way. The last chapter ,Collateral Orthopedics ,is worthy

of careful study, and will repay anyone interested in the subject.

P. A. McIlhenny.

Non-Surgical Drainage of the Gall Tract. By B. B. Vincent Lyon, A. B., M. D. Lea & Febiger, Philadelphia and New York, 1923.

There is no subject in the field of modern medicine which has aroused in recent years a keener sense of interest and stimulated greater effort of closer study and observation than the one which the author has so admirably surveyed and presented in this volume. In introducing the subject, he touched upon the attractiveness of scientific research in a field heretofore unexplored. He succeeded in penetrating the Gibralter of man, nature's pride. With unlimited zeal, perseverance and enthusiasm, the author pursued his course, weathered the fiercest storms of criticism and stood unflinchingly at his post of duty until he created this volume, a monument to his heroic efforts to explore the filtration plant of the human machine. With the skill of a well trained architect, he rescribes first the foundations of that plant and the functioning capacity of each part. Then, he proceeds to unravel the mysteries of man's most wonderful chemical laboratory. The historical sketch is quite interesting, although it can be traced to an earlier period, the Babylonian school of the Talmud. The plea for an early recognition of biliary disease and its relationship to the gastro-intestinal tract merits our attention. A study of the new diagnostic methods for the detection of liver and gall bladder diseases adds much to the advance in medical knowledge. Many promising features to detect liver and pancreatic diseases with their wide range of influence upon the gastro-intestinal tract are in store by mastering the chapters on quantitative determination of enzyme acivity in duodenal fluids, and functional tests of the liver. We may not agree with him on the A B C bile, a few details of his method or the contrary innervation feature for lack of proof by animal experimentation, but the convincing evidence presented of results obtained speak for the fact and fully justify the act. This volume is brimful of interesting though for the internist and surgeon who quite often fail in their efforts to brng relief to the chronic gastro-intestinal invalid whose cause the author has greatly espoused.

A. L. Levin.

Hygiene and Public Health. By Lewis C. Parkes, M. D., and Henry R. Kenwood, M. B., 7th edition. P. Blakiston's Son & Co., Philadelphia, 1923.

Parkes and Kenwood's text book of Hygiene and Public Health represents in itself a most complete and efficient exposition of our knowledge regarding those influences which actively contribute to the health of the individual and of the community.

It is divided into fifteen chapters covering the subjects of Water, Excreta and Refuse Disposal, Air and Ventilation, Warming and Lighting, Buildings, Climate, Exercise and Clothing, Foods, Infectious and Communicable Diseases Maternity and Child Welfare, School Hygiene, Industrial and Marine Hygiene D infection and a chapter on Vital Statistics.

The discussion of each of these subjects most excellent and comprehensive; notab the section of Communicable Diseases. Th is very complete and comprises a very co prehensive summary of our knowledge of t acute infectious diseases, their transmissi and statistical data of their prevalence. is notable that this chapter also contains section on cancer which is of peculiar inte est. It includes also a discussion of Venere Diseases and reflects the attitude of the a thors to this subject. The conditions und which venereal diseases in England are co batted and the manner in which this work carried on is in many ways different from t ones employed in this country. Howeve it is possible for a central Government bring pressure of a kind with which we a not familiar.

The whole book is written essentially f conditions as they exist and prevail in En land and the British Empire, but there is doubt that a great deal of the advice could applied with advantage in this country.

The book has the usual atmosphere of English author, but it is not distinguished any particular bias. The chapter on Ventil tion, Heating and Lighting presents proble with which we are familiar and which in ma instances we solve with greater ease on a count of the conditions peculiar to the Unit States.

No one could read this discussion of the most important subjects without deriving gre benefit and a wider vision of the proble which confront the Hygienist and the Publ Health Official; It is always worth while view an object from two or more differe standpoints, by so doing we improve our ow perspective, this is what the treaties of Park and Kenwood accomplish to a marked degre

Oscar Dowling.

Pennington's "Diseases and Injuries of t Rectum, Anus and Pelvic Colon." By Rawson Pennington, M. D., F. A. C. S. Blakiston's Son & Co., 1012 Walnut S Philadelphia, 1923.

Pennington has given us a book of mo than usual interest from both a historical well as a medical standpoint. Each subject well covered and the illustrations are abo the average for a work of this sort. The ana omy, physiology, and pathology is thorough covered in a clear, concise manner follow by the author's operative technique and a ve comprehensive bibliography. The volume w be found of equal value for both surgeon a practitioner.

C. L. Peacock.

Obstetrics for Nurses. By Charles B. Ree M. D. 2nd., Edition C. V. Mosby Compan St. Louis, 1923.

The text is large, clear and distinct a good for night reading. Cuts are well illu trated, are clear and can be followed easi by the text. The descriptions are short to t point and should be easily grasped by t pupil nurse.

P. B. Salatich.